

Science Library

THE

Desert

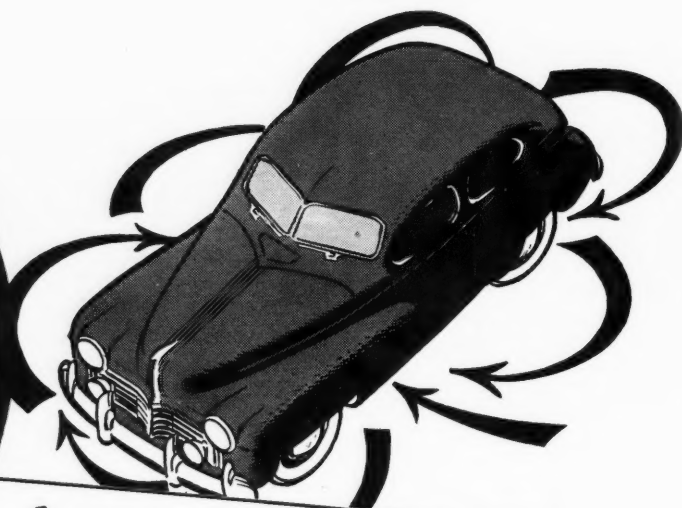
M A G A Z I N E



APRIL, 1948

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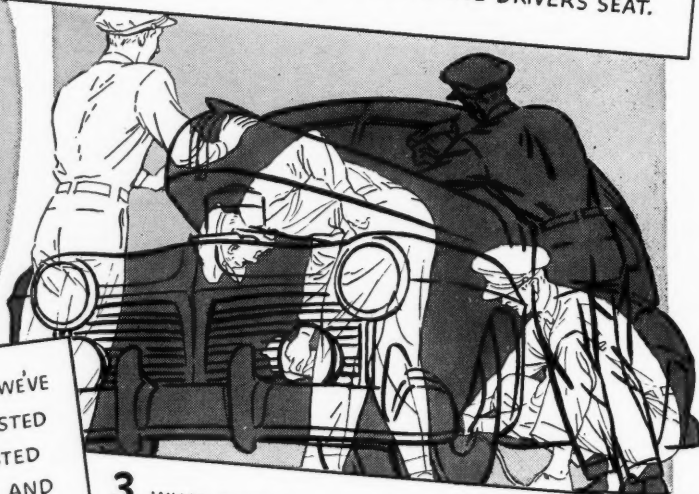
WHEN IS A CIRCLE THE SHORTEST ROUTE?



1. NEXT TIME YOU STOP AT A UNION OIL STATION, NOTICE HOW THE MINUTE MEN WORK AROUND YOUR CAR IN A SYSTEMATIC CIRCLE STARTING AT THE LEFT SIDE OF YOUR WINDSHIELD AND ENDING AT THE DRIVER'S SEAT.



2. WE'VE GIVEN THIS CIRCLE ROUTE SO MUCH STUDY THAT WE'VE GOT IT DOWN TO A SCIENCE. EVERY STEP HAS BEEN TESTED IN ACTUAL PRACTICE SO THAT NOT A MOTION IS WASTED IN CLEANING YOUR HEADLIGHTS, WINDOW GLASS AND REFLECTORS—AND CHECKING YOUR OIL, WATER AND TIRES.



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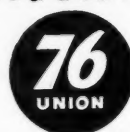


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YOU WANT,
SEE THE
MINUTE MEN!



**UNION OIL COMPANY
OF CALIFORNIA**



Desert Calendar

- March 21-27—Yaqui Indian Easter ceremonies, Tucson, Arizona.
- March 22-26—Sierra club camp at Phantom ranch, Grand Canyon, Arizona.
- March 26—Easter pageant, "The Master Passes By," presented by civic groups and individuals of Coachella valley in Box canyon east of Mecca, California, 8 p. m.
- March 28—Easter sunrise services, Traverline rock by the Salton sea, Coachella valley, California.
- March 28—Easter sunrise services, Death Valley sand dunes near Stove Pipe Wells, Death Valley national monument. Owens Valley Ministerial association in charge.
- March 28—Fourteenth annual Easter sunrise service with world wide broadcast over NBC, south rim, Grand Canyon national park. Daniel Poling, speaker.
- March 28—Easter dances, various Indian pueblos, New Mexico.
- March 28—Easter Sunday soap box sled derby, sponsored by Arizona Sno-Bowl, Flagstaff, Arizona.
- April 1-3—Rawhide Roundup, Mesa, Arizona.
- April 2-3—Twelfth annual Pinal county 4-H fair, Coolidge, Arizona.
- April 3—Lecture: Joseph Muench, "Photographing the Southwest in Color," 8 p. m., Desert Museum, Palm Springs, California.
- April 9-11—Sixteenth annual championship rodeo, state fairgrounds, Phoenix, Arizona.
- April 10-11—Sierra club, weekend trip to Desert Hot Springs, on the slope of the Little San Bernardino.
- April 14—Giant slalom and downhill, Alta, Utah.
- April 15-18—Arizona state open tennis tournament, Tucson, Arizona.
- April 16-17—Third annual Yuma county junior agricultural fair, Yuma, Arizona.
- April 17—Lecture: Mrs. J. H. Comby, "Glimpses into the Realm of Nature," Desert Museum, Palm Springs, California.
- April 17-18—Sierra club, Desert Peaks section, climb of Martinez mountain in the Santa Rosas.
- April 17-18—Ramona pageant, Ramona bowl, Hemet, California.
- April 18—Sno-Bowl trophy race, Arizona Sno-Bowl, Flagstaff, Arizona.
- April 24-25—Lone Pine Stampede, parade and western dance, Lone Pine, California.
- April 24-25—Sierra club climb of Whale peak, highest in the Vallecitos and Granite mountain, highest in the Oriflamme mountains. Meet at Julian.
- April 24-25—Ramona pageant, Ramona bowl, Hemet, California.
- April—One man show of paintings by Arnoldo Rubio, Mexican artist, best known for his frescos in public buildings, at Southwest Museum, Marmion way and Museum drive, Highland Park, Los Angeles, California.



Volume 11

APRIL, 1948

Number 6

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Photograph by Harold Kellogg, Santa Fe.

DESERT VARIETY

By M. M. PARRISH
Albuquerque, New Mexico

A back drop laid in lapis lazuli,
With mountains scalloping the sky,
Borders a stage of pale and infinite gold
Set for a pageant ages old;
No wearisome wait for the program to begin—
It's under way as we move in:
Some midget prairie dogs at first attract,
Doing a disappearing act;
A group of buoyant acrobats succeeds—
The somersaulting tumbleweeds;
Countless cacti, each in dramatic pose,
Now entertain with stark tableaux:
A mother with reaching arms, rigid and wild,
Imploring for her missing child;
A prophet with ominous upward-pointing finger
Who warns to beware of Heaven's anger;
A baby cactus seeming to say "So big!"
A wizened and distorted hag;
And all stand ready, as stage folk do they say,
To help a traveler on his way.
Then—a star-embroidered curtain falling;
A spotlight beaming; a coyote calling.
He who finds the desert dull
Must have a most gregarious soul!

AGE

By TANYA SOUTH

The night recedes—the light ascends,
So this is age! My vision wends
To wider scopes. I now perceive—
Fearless, untrammelled. And believe
That he who gives his soul to light
Shall guided be aright.

Broader and brighter now the day;
Steeper, yet more direct the Way
Unto the stars. And I strive
With all my soul—now more alive
To each unveiling face of Truth
Than when I was a youth.

DESERT TRAIL

By NELL MURBARGER
Costa Mesa, California

I've a rendezvous with a desert trail,
With a willing horse, and a song . . .
When sand and sun and the sky are one,
Who cares if the way be long?
With sage on my lips and the wind in my face,
I will ride till the night draws nigh.
What matter, then, where my camp be made?
What matter where I shall lie?
Whether dark clouds threaten or starlight
gleams
On the silvery sweep of the dune.
My fire will burn with a ruddy light;
My kettle will sing its tune . . .

Partner of mesa and rimrock,
Stranger to trouble and tears;
With a stout-hearted horse beneath me.
I would ride through the sun-splashed years.
With a bend beyond to invite me on
To a magical, unknown goal,
Over hill and dale to The Last Great Trail
I would follow my questing soul.
'Though the way be steep and the night be dim,
At last, when I reached The End
I would lay me down 'neath the darkening sky
And the trail would be my friend . . .

FORSAKEN LADY

By ROBERTA CHILDERS
Fallon, Nevada

Far up the range of mountains
Rock canyon veils its face
With yellow asps and pine trees,
And silent mists that trace
About an old warped cabin
Walled in with fence of stone.
Shining under a sagebrush,
I found the bride, alone.
A ten-cent white glass lady,
Who slept beneath the tears
Of dripping bush. Deep spider lace
Enmeshed her lonely years.

HELL'S HALF ACRE

By CELIA E. KLOTZ
Moscow, Idaho

They call it the land that God forgot,
The devil's half acre of hell,
But a cactus plant found roots in a rock,
And into the silence, a bird's song fell.

A cool breeze blew from the hills above
Caressing the shack as it stood alone,
As if it knew in that shack was love.
On the devil's land could there stand a home?

The sun sank low in a wreath of clouds
Tinted with purples and gold and tans,
Painting a picture of glory and peace
Defying the work of an artist's hands.

Then low in the west the thunder rolled
Like the voice of a god from a distant land,
And the moon raced madly between the clouds,
Could such beauty be made by an evil hand?

So give me this land that God forgot,
Though its profit and yield be low,
This barren and silent and beautiful spot
For the tired heart to go.

THE PEOPLED ROCKS

By HELEN L. VOGEL
Coachella, California

Have frogs and gargoyles, goblins, sphinx
Been turned to stone through age and kinks
Or has the heat of desert sun
So scorched and baked and burned well done?

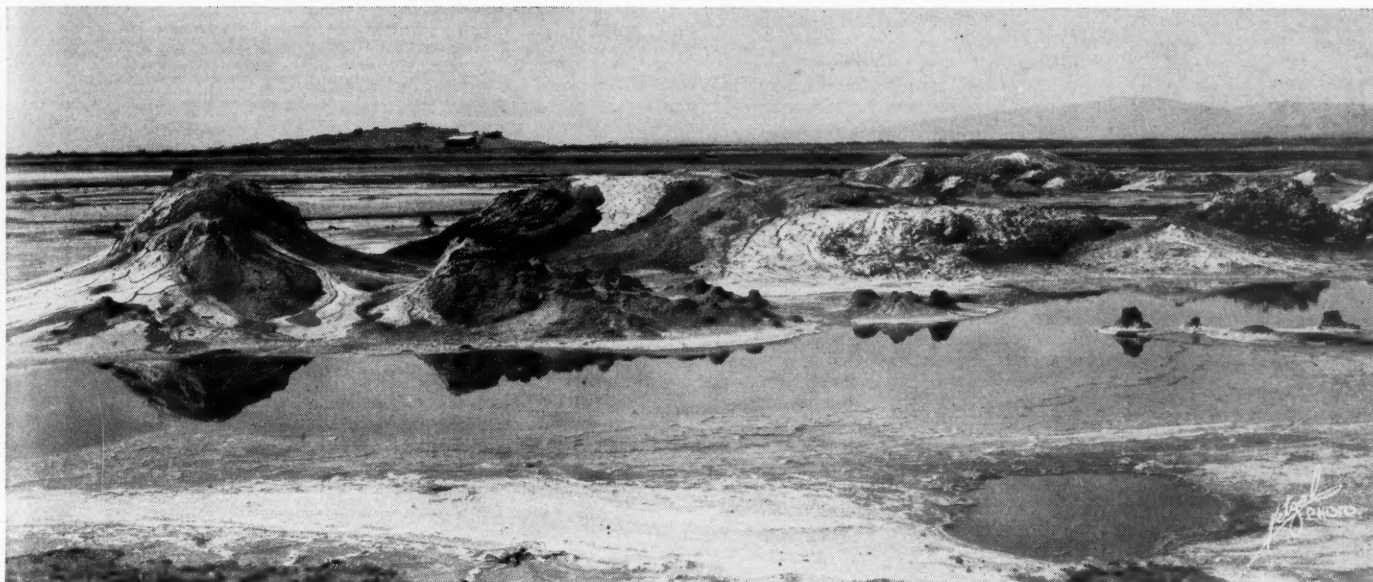
For there they crouch or sit or lie
As if about to jump or fly.
Atop the peaks, athwart the ridge,
As natural statues by a bridge.

I would not wish them back to life
Nor darodactyl and his wife.
They'd only add to all our bad
And make this world of ours worse mad.

Perhaps my eyes are sun bewitched,
The desert nary with a sphinx.
I only hope they stay in stone,
These things that are not blood and bone.

Nature's Freaks on Salton Shore

Rocks that float, mud that boils, gas that makes dry ice, springs that flow paint—these are just a few of the many strange freaks Nature has contrived for those who take the field trip mapped this month by Harold Weight. This is the story of Obsidian buttes and other interesting phenomena along the southeastern shore of Salton sea in California's Imperial Valley. And if you want obsidian for your collection or shining black volcanic glass for your rock garden the map accompanying this article will show you the way.



The boiling mud geysers are building mounds on the shore of Salton sea. Mullet island is the knoll in the background. Photo by Leo Hetzel.

By HAROLD O. WEIGHT

AMUHUA of the Kamia tribe was on a salt-collecting trip to the bottom of Salton sink when a rabbit bounced up almost at his feet and headed for the nearby rocky butte. For the moment Amuhua forgot about his salt-gathering and bounded after the rabbit with his curved throwing stick, which his tribesmen called *kapu*, ready for an open shot.

But on the slope of the butte, the Indian lost interest in the rabbit. The ground about him was covered with chips and boulders of shining black volcanic glass. Amuhua knew he had made an important find—or rather, that the tribe had made an important find. For among the Southwestern Indians, mineral deposits were considered the property of the group, even though found by an individual.

Perhaps those are not the exact circumstances of the first discovery of obsidian on those strange volcanic buttes which poke their heads through the silt floor of Imperial Valley 10 miles northwest of Calipatria, California. The obsidian may have been found before the salt, and the finder may have been a member of a tribe pre-dating the Kamia in the great below-sea-level sink. But in its essentials that is the

story. Although the California Indians are known to have worked 142 quarries and mines, it is doubtful if any of those deposits were discovered through the process of prospecting as we know it now.

The white-whiskered old-timer of the desert made his big strikes while hunting straying burros. His Indian predecessors found theirs while foraging for food.

Amuhua and his people left their marks on Obsidian buttes—flakes and discarded bits of volcanic glass from what probably was Imperial Valley's first factory. And their product was not entirely for local consumption. The obsidian from the Salton buttes is marked by small gas holes lined with calcium. Adan E. Treganza, an anthropologist who has spent much time on the matter, reports that this characteristic obsidian has been found in aboriginal camp sites from Palm Springs to San Felipe on the Gulf of California and from the Peninsular mountains to the Colorado river. Pumice, mined by the Indians as an abrasive, has been found as far west as Jacumba.

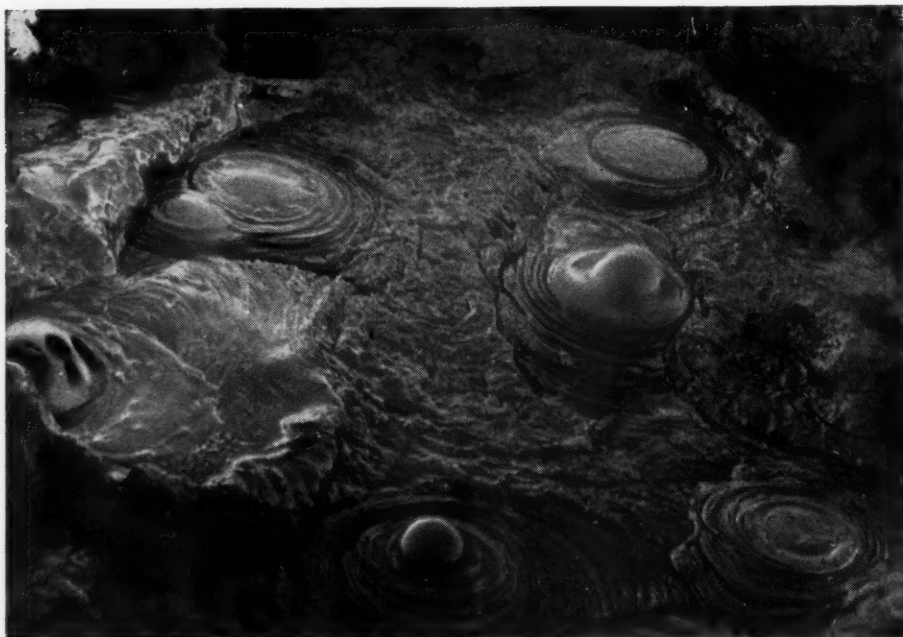
The Salton buttes are only an hour's drive from Desert Magazine's office in El Centro. It was a place I had always intended to visit, but never got around to. When at last I went and discovered what a geological jack-pot Nature had prepared

for the visitor in this strange corner of her desert domain, I regretted the times that I had not gone.

Most of the route lay along paved roads through the valley's rich agricultural flatlands where carrots and lettuce were being harvested and thousands of little white dunce caps protected young melon plants which would have been foolish indeed to thrust tender tendrils into the brisk night temperatures. The morning air was clear and cold. Far to the north new snow crowned San Jacinto's crest and to the east the great sand dunes shone with equal whiteness under the sun.

The roads, which follow every irrigation ditch, were washboardly when I left the Calipatria-Niland paving, but to the desert driver, they still seem like highways. I drove on, past windbreaks of tamarisk and irrigated acres. But squares of desert were encroaching now, and suddenly the last reclaimed land was gone and I was in the atmosphere of another world—scrubby salt-loving vegetation, grey rocky piles and glimpses of the Salton near the marshes where the sullen Alamo inches its muddy flood into the sea. I turned left across the irrigation ditch and followed a twisty auto trail—used probably by hunters—to the Obsidian buttes.

There are five principal outcrops near



Burping mudpots of the Salton seashore.

the southeastern shore of the Salton: Obsidian buttes, Rocky butte, Red hill, Pumice butte and Mullet island. The Obsidian buttes are the southernmost of the lot, and they are on land owned by the Imperial Irrigation district. District officials have given permission to Desert readers to visit Obsidian buttes and to collect the grey vesicular pumice and the black obsidian which are abundant there.

The grey rock which predominates in all the Salton buttes except Red hill, has been identified as being made up of tridymite, a high temperature form of silica, and feldspar, formed from a typical rhyolitic obsidian, probably through the action of hot gases. Obsidian crops out on at least two buttes—Obsidian and Pumice—and pumice, interbedded with sediments is found many places in the area. Red hill is another matter. It seems to be formed of volcanic tuff in which small somewhat rounded bits of obsidian and pumice have been imbedded. There are several interesting erosional forms at Red hill.

Geologists, with characteristic disregard for the briefness of the human span, say the Salton buttes are of very recent origin. But that doesn't mean they were pushed up day before yesterday while you were out digging geodes in the Chuckawallas. They definitely were created during the Quaternary period. That limits their age to a couple of million years and probably they were created within the last few thousand, which is quite a period of time when you look at it from a personal viewpoint.

When Amuhua and his partners sat on the Obsidian buttes, happily chipping out arrowpoints and knives, they probably speculated upon the origin of the strange terrain which surrounded them. The Indians had a keen eye and active imagina-

tion, and it would be interesting to know what sort of explanation they figured out. But geologists are pretty good at spinning that sort of yarn themselves.

According to H. T. Hill, the molten subcrust of the earth sometimes reaches the surface along a fault line, and that may explain what has happened along the southeastern shore of the Salton. The buttes sit directly astride an extension of the great San Andreas fault which has had so much to do with the earthquakes and structural features of California. And the mud and steam volcanoes which are so striking a feature of the Salton Buttes area also follow directly along the fault line and once were traced for a distance of nearly 15 miles. One of the theories which has been advanced is that water from the Salton seeps down to super-heated rocks below and the resulting steam and gases find their way to the surface along the fault.

Many Indian tribes believe that earthquakes are caused by giants who live in the earth. The giants under Imperial Valley were a restless lot at times. November 9, 1852, they must have had an argument and in the resultant vibrations Fort Yuma was violently shaken and the shocks continued almost daily for several months.

At about the same time, the mud volcanoes beside the Salton were discovered by the Yuma garrison. From reports by J. L. Le Conte and J. A. Veatch, who visit-

ed the locality in 1855 and 1857, they must have been more active then than they are at the present. Perhaps their immersion of many years beneath the waters of the Salton sea, when the Colorado river broke through and formed that body in 1905-7, dampened their enthusiasm. Now they seem content to rise as great boiling mud

Looking across the sea from Mullet island, which is now actually a peninsula. It is the only one of the buttes still touching the sea.



pots, building themselves higher and higher as the mud pours over the sides and hardens. Within these self-constructed stew-pots the mud burps moodily, and strange mud-coated balls of gas rise through the surface and plop as the gas escapes. Steam fusses and whistles upward through the mud in a number of places and there is a sulfurous smell pervading the entire area.

When the Colorado river flooded the Salton basin in 1905-7, the buttes became islands. For years they were entirely isolated from the rest of the valley, and the aquatic birds thronged to them and nested upon them. Visitors to the rocky islands found the ground thick with eggs. What is now Mullet island was called Pelican island and Cormorant island. Pumice butte was known as Obsidian island, and Obsidian butte was called Big island.

A party from Carnegie Desert laboratory, including D. T. MacDougal and Godfrey Sykes, made many trips around the shores and the islands of the Salton when the water was highest, to study the effect of the flood. When they visited Big island in October, 1912, although the butte had been continuously isolated for at least seven years, they found the tracks of a raccoon, and of some member of the cat family. There were many rodent burrows, and they saw two rabbits and many lizards. When the party made its first voyage across

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"Hot air spring" on Pumice butte. On this volcanic hill moss grows on pumice rocks, kept moist by the gas which comes from this vent.



Lucile Weight brings back a chunk of obsidian to work into book ends—and learns that volcanic glass will cut your fingers—like glass.

the Salton, thousands of pieces of pumice were afloat on its surface. Small pieces still may be found on almost any shore of the Salton, where the "rock that floats" has drifted from the southern buttes.

The water receded and the islands became buttes again. This was not the first time they had been islands, and perhaps it will not be the last. Upon the buttes today numerous shorelines of old Lake Cahuilla or Blake sea, the freshwater lake that filled the basin within recent times, can be seen. The Kamia have a legend that when they first came to the valley a great lake filled most of it and covered the present site of El Centro.

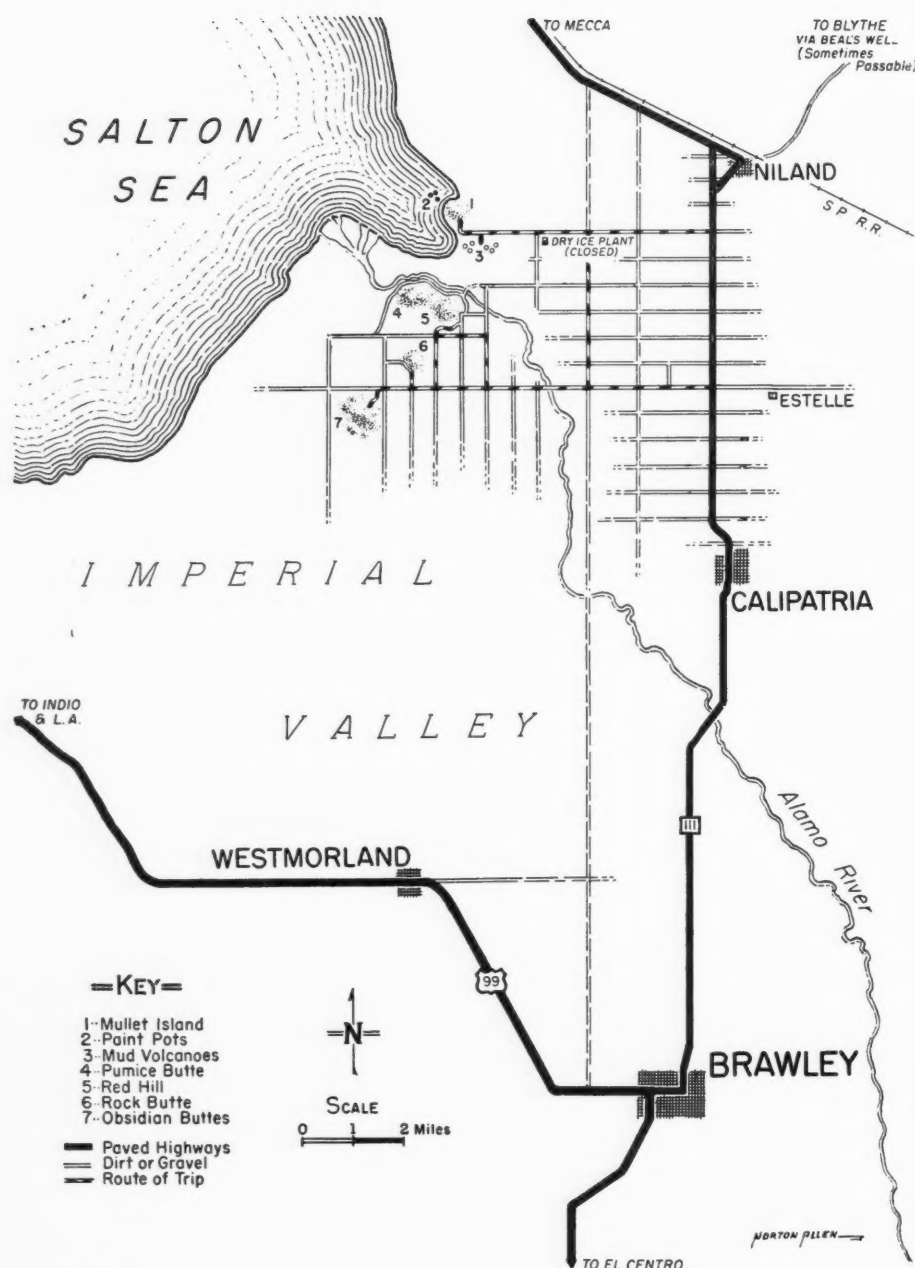
Now, as increasing waste irrigation water drains into the Salton, the level is rising again, and waters once more wash against the seaward side of Mullet island. The Paint Pots—mud pots from which highly colored clay oozes—are almost under water and the mud bank on which they lie, northwest of Mullet island, must be reached by boat. When old Cap Davis ran the island as a resort and hunting club, he used the natural pigments from the Paint Pots to paint a series of strange primitive canvases. Some of them dealt with the des-

ert, but most of them showed the adventures of the ill-fated Donner party. Davis

was a student of Western history, and his particular interest lay with the Donners.



Hell's Kitchen, the museum built on Mullet island by Cap Davis. Inside are some of the gruesome paintings depicting the tragedy of the Donner party.



The paintings still may be seen in the museum on Mullet island, along with various objects of local interest. But most of them are weathered and cracked.

Both Mullet island and the mud pots are privately operated, with Mr. and Mrs. E. McFarland in charge. McFarland is an ex-test pilot and air forces flyer with many Mediterranean theater missions, who hopes to regain health in the desert. They plan expansion of present facilities at the island, where a 50-cent parking fee is charged, and expect to reopen the restaurant there. During duck season there are so many hunters on Mullet they sleep on the tables.

Admission to the mud pots area is 20 cents. The owners have built walks so it is not necessary to tramp through the chemical mud to the active pots, and little stands have been constructed from which the mud burps can be observed. Samples of the

natural pigments from the Paint Pots are on display at the mud pots.

There have been a number of commercial activities in the area. Pumice was mined for abrasives from several sites until the large deposits were exhausted. Salt is made on the edge of the Salton, by running the sea water into earth tanks and allowing the water to evaporate. The Kamia Indians once obtained their salt by leaching it from the chemical-impregnated soil around the edge of the sink, then boiling the product to crystallize the salt.

Late in 1932 a well was drilled east of the mud pots to tap the carbon dioxide gas which oozes to the surface there. Productive gas sand was struck 600 feet down, and the sand was found to be 35 feet thick. In 1942 there were 15 producing wells in the area and there was a dry ice plant at the field and another at Niland. Gas was piped to Niland through 3½ miles of 4½ inch pipe, to the plant of the National Dry Ice

corporation. At Niland the carbon dioxide gas was compressed and liquified. Twenty thousand cubic feet of the gas were required to make one ton of dry ice and the plant was capable of making 25 tons a day. Natural Carbonic products had eight producing wells. The plant of the company located in the field, had a capacity of 20 tons per day. Today that plant has suspended production and is falling into ruin. It can be seen beside the road that leads to the mud pots, with the capped wells fizzing noisily.

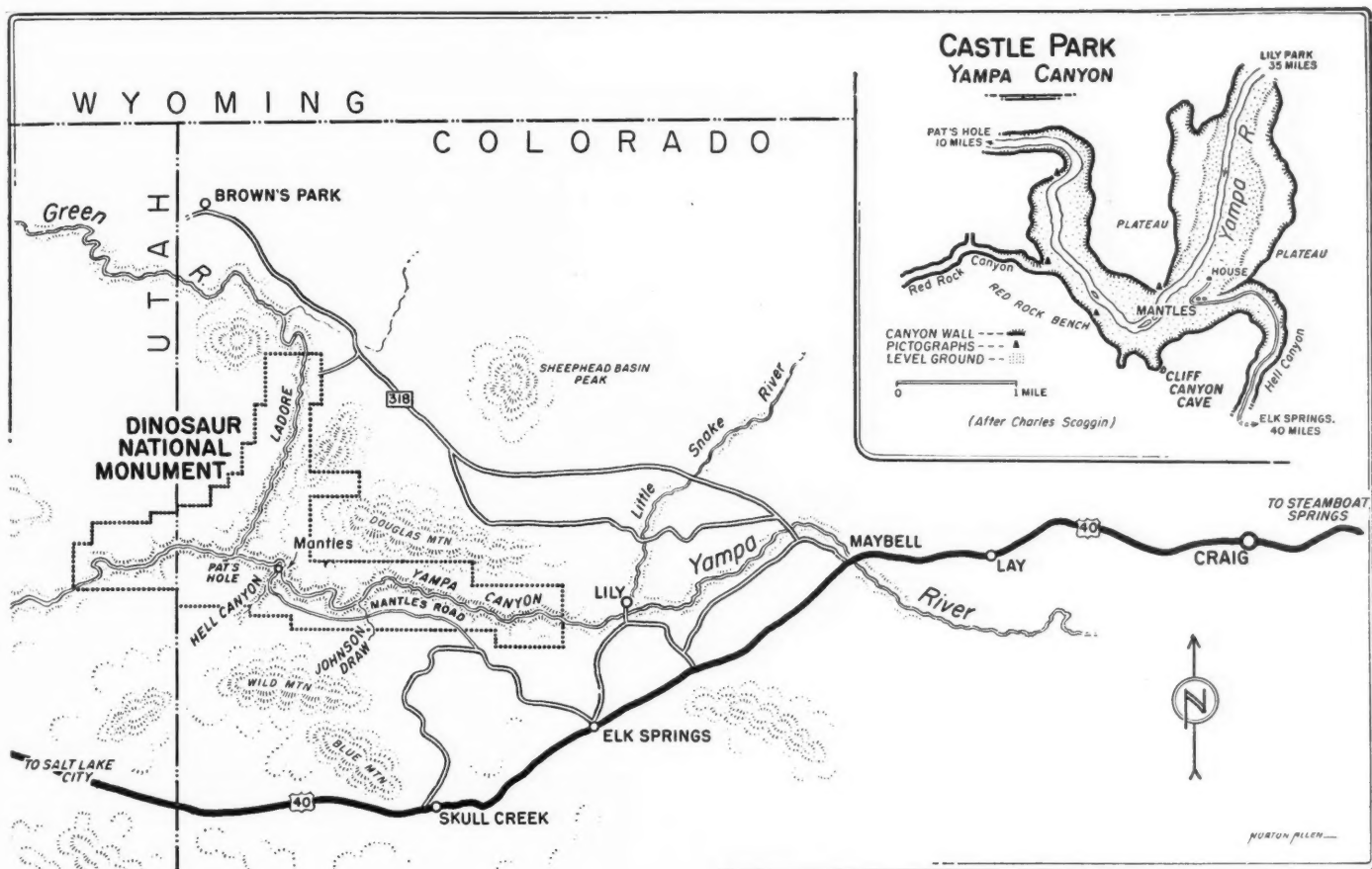
Everyone knows that much of the Imperial Valley is below sea level. But when one approaches the mud pots, that knowledge becomes a reality. When gas fizzes from the ground, mud boils upward, and the air is filled with the odor of sulfur, the visitor begins to wonder just how far below sea level he is. As I hiked across Pumice butte, I noticed a small black hole which looked as if it might penetrate the heart of the earth. The soil around the mouth of the hole looked damp, and small patches of moss were growing on the rocks. Amazed at the evidence of moisture on an extremely arid slope I bent over the hole to study it. My face was bathed in warm, moist, faintly gaseous air. It poured silently, steadily upward from that small hole in the big volcanic butte.

I felt a little like the cowboy who is supposed to have explored a cave near the mud volcanoes in Lower California. The cowboy came out quickly, much disturbed, and climbed on his horse. "The crust's too thin in this neighborhood," he complained. "The end of that hole is only 40 feet from hades. I'm a fair gambler and only an ordinary sinner, but I don't want to take any chances hereabout."

But those with clear consciences will find much to interest them in the volcanic buttes and along the southeast shore of the Salton. They might even find Pegleg Smith's black-coated nuggets of gold, for these strange hills have become identified, in legend, with the rich black buttes that Pegleg found and lost. As Philip Bailey tells the story in *Golden Mirages*, Pegleg entered a great sink and reached boggy ground where a volcano was steaming. Beyond it he found mounds with red and black mud oozing out, and not far from these mounds he found his gold.

That fits the Salton buttes perfectly—almost too perfectly, as a matter of fact. There is a sort of "tailored-to-fit" feeling about it. But if they do not find gold, rock collectors will discover great chunks of obsidian easily obtainable—a car can be driven to the base of Obsidian buttes—and the Imperial Irrigation District has given permission to collect. The obsidian is interesting for specimens and book-ends, and makes striking garden rock.

And every visitor will come back with a little more knowledge of the strange processes through which Nature builds the world in which we live.



Winter Dig in Yampa Canyon

The rumors were persistent: cliff-dwellings similar to those of the Southwest had been seen in the canyon of the Yampa river in northwestern Colorado and there was evidence of Basketmaker Indian culture in the area. Did the cliff-dwellings exist or were they the vivid imaginings of some wandering cowboy? In the winter of 1939-40, Charles Scoggin and Edison Lohr were sent by the University of Colorado museum to settle the matter and to excavate a huge cave on the Charles Mantle ranch, ten miles above the confluence of the Yampa and Green rivers. Here is what they found out about this rugged portion of the Colorado river watershed.

By EDISON P. LOHR

Photos, courtesy University of Colorado Museum, made by Charles Scoggin, later killed in World War II

IN DECEMBER, 1939, Charles Scoggin and I were sent by University of Colorado museum for a winter's digging in a previously examined but unexcavated cave near the Charles Mantle ranch in Yampa canyon, Dinosaur national monument. We were to investigate repeated rumors that something resembling a southwestern Indian Basketmaker culture existed along the Yampa and to determine whether there actually were cliff dwellings in the numerous caves along the cliff walls or whether they were the imaginings of some romantic cowboy inspired, perhaps,

by the famous Wetherill discoveries at Mesa Verde.

This was December, mind you, and only the fact that the cave was well protected made excavation possible. Even so, a man has to be more than a little crazy to attempt archeology in northwestern Colorado in winter. Chil and I were crazy.

Many motorists have seen the exhibit of dinosaur bones in the western part of the monument north of Vernal, Utah. But until you've bucked your way from Elk Springs, Colorado, over 40 miles to Charley Mantle's ranch at the mouth of Hell

canyon, you just haven't seen much of the gorgeous scenic landscape which Uncle Sam had encompassed within this national reserve.

Since our work was to be carried on in a national monument, although mostly on Mantle's property, we obtained official permission to test additional sites through David Canfield, superintendent of Rocky Mountain national park. Besides the V-8 station-wagon and necessary equipment provided by Hugo Rodeck and the University of Colorado museum, we were paid a small salary. Two impoverished students actually being paid for a grand adventure in archeology! But we took the car, equipment, and the money...

A look at road maps will show there is no problem in driving to Elk Springs, Colorado, about 50 miles west of Craig on U. S. 40. Out of Elk Springs, which we reached December 11, the fun began. A dirt trail, blandly referred to on most highway maps as road, unimproved, swings generally westward to Bear valley, forms a loop which hopefully approaches the canyon, then sadly crawls back to Highway 40 at Skull creek. We had no interest in such a circular journey. Our problem, Chil and I found, was to locate the unmarked junc-



*Top—Cliff Canyon cave, Yampa canyon, where Scoggin and Lohr dug to determine if early inhabitants belonged to the Basketmakers. Mound of debris washed from above which appears to lie inside the cave actually is outside the overhang.
Bottom—Rope was necessary to reach an almost inaccessible cave above the Yampa river.*

tion where Charley Mantle's hand-made road branched from the Bear Valley road, about 20 miles out of Elk Springs.

I was almost sorry when we found the road. We picked and shoveled our way across the pinyon-pine and juniper-forested plateau, roared in and out of gulleys, worried about our over-loaded V-8 and finally reached the top of Hell canyon.

I said it was possible to reach the Yampa river via Hell canyon—so it is. The problem, once you start down that boulder-strewn cut into Hell canyon, is not to get down but to reach the bottom in one piece. Chil looked hopefully over the edge, put the car in low gear, grabbed the emergency brake. With a grinding, slipping moan, the V-8 slid us, junk and all, down to the bottom of Hell. From the foot of that rocky descent, it is only two miles down the dry creek bed to the Yampa and Charley's ranch, which we reached December 12.

Like all cattle ranchers who see only a handful of people in a year, the Mantles greeted us cautiously, but presently accepted us as neighbors. We were flattered. That's a rough country and people must be lively to survive in it. It's wild and lonely. Though the Mantles live in the largest school district in Colorado, Mrs. Mantle's five children, three of school age, were the only pupils in it. A teacher, usually a local girl trained at Colorado state college at Greeley, was imported for the winter, and school was held in a log cabin built for the purpose.

Our home for the winter was the basement of Charley's new house up the Yampa about a half mile. We were lucky. There had been a strong possibility that we would either use a tent or actually live in the cave we were to excavate. The Mantles lived in two log houses at the mouth of Hell canyon, and had not moved into the unfinished new house, a marvel considering its location and construction.

Cement for the huge, ten-foot ceiling basement had been hauled in at great expense and labor. Outside construction was of Douglas fir logs skidded down from the 8000 foot slopes of the mountains just outside the canyon and above Red Rock bench. The upstairs was carpentered in soft finish pine. There was a piano, in excellent tune, parked in one unfinished room. After a day's excavation as I started supper I'd hear Chil clump hollowly across the floor above and, using a hunt-and-peck style, plunk out "South of the Border" and other choice ditties of the day.

We began work by attempting to survey Castle park, as Charley's three mile stretch of livable canyon is called. It was too cold. Though I have never spent a milder Colorado winter, trying to use a plane table and alidade proved too much. We were obliged to let the surveying go until spring.

The temperature rise in the open during

the day was truly encouraging. No such luck awaited us, however, so far as our cave was concerned. Mantle's cave (Cliff Canyon cave, officially) lies about a mile down the Yampa from Charley's and up a short side canyon on the south side of the river. A glance at the sketch map will show that the cavernous opening of our powder-dry cave faced north. In this connection I quote from Charles Scoggin's preliminary report to the National Park service on our work:

"It should be mentioned in connection with the caves and rock-shelters of the Castle park area that because of the regional dip of the rock strata, those shelters which open to the south, and would thus, normally, be most favorably located for intensive occupation by man, are invariably damp to wet from ground waters breaking out along bedding planes within their interiors."

We had, then, a mixed blessing—a cold cave, but a dry one. And it was cold! Accuracy is required of archeologists, but did you ever try feeling through cold sand with blue fingers? We tried to heat ourselves by delivering impassioned political speeches in the acoustically perfect cave. But we ended by building the usual cedar-wood fire.

Technically, of course, this wasn't a cave, but a typical shelter like those at Mesa Verde, but there are no house structures of any kind in the big Yampa shelter.

Measurements showed that the reddish sandstone opening was about one hundred yards long, one hundred and thirty feet deep from the extreme outer overhang to the back wall, and had an awesome 90-foot ceiling. We used to pause in our work and consider thoughtfully the enormous rocks that had fallen from the red-brown roof and wonder about things.

Because of the general reluctance of human beings to be hit by collapsing roofs, we started excavations along the back wall where long archeological experience has shown cave Indians tended to live or to cache their precious belongings.

The cave was a gold mine in one respect. We found perfectly preserved hide clothing, basketry, cedar-bark twine, reed mats, corn-on-the-cob, flint knives with handles still attached—and a medicine bag con-



Top—Yampa canyon near Castle park.

Center—Lohr and Scoggin found most of the artifacts along the back wall where their excavations are shown.

Bottom—The author removes a buried Basketmaker willow basket which had been placed top down in a hole in the old cave floor.

taining among other gadgets, the finest red flicker-feather head-dress you could imagine.

But little actual living had been done in the cave. Since our purpose was to learn the nature of the prehistoric peoples who had been there, and not simply to collect some pretty specimens, the absence of a cave midden (garbage heap) was disappointing. Nothing reveals a people's history like trash piles. We did, however, find numbers of pits dug into the true floor of the cave. These contained squash, bean and corn seeds.

With the exception of masonry storage cists constructed with flat sandstone slabs and cemented together with red mud upon which finger-prints of the fashioners were

plainly visible, there was nothing to be found in the central and outer portions of the cave. Plainly, the Indians had not cared for that high ceiling and rock fall possibility, either.

By April, 1940, we had finished Mantle's big cave, explored and mapped additional cave sites in the canyon country, and concluded that the Yampa cliff dwellings were a myth. On a later expedition in 1941-1942, Charles Scoggin and the National Park service found some peculiar house structures in two as yet unexcavated caves in the canyon. But these structures are not in any way similar to true southwestern cliff dwellings. We finished our sketch map of Castle park, and hiked overland to Pat's Hole on the Green river.

Probably as interesting as the monument's prehistory is the record of its many historical characters. Pat Lynch, for whom Pat's Hole is named, wandered into the Yampa shortly after the Civil war. Charley Mantle says this canyon hermit named Hardin's Hole, Castle park, Hell canyon and Red Rock bench. The Yampa canyon walls, besides exhibiting many Indian pictographs, offer Pat Lynch's inscriptions, including several dates and boat pictures.

For some reason this old sailor, who had served with the British and French navies and in our own Civil war, liked the loneliness of the country. Rumor has it that Pat had been involved in some scrape and had fled west.

Another interesting and perhaps related possibility is written (not quoted exactly) in Pat's diary which Mrs. Mantle owns:

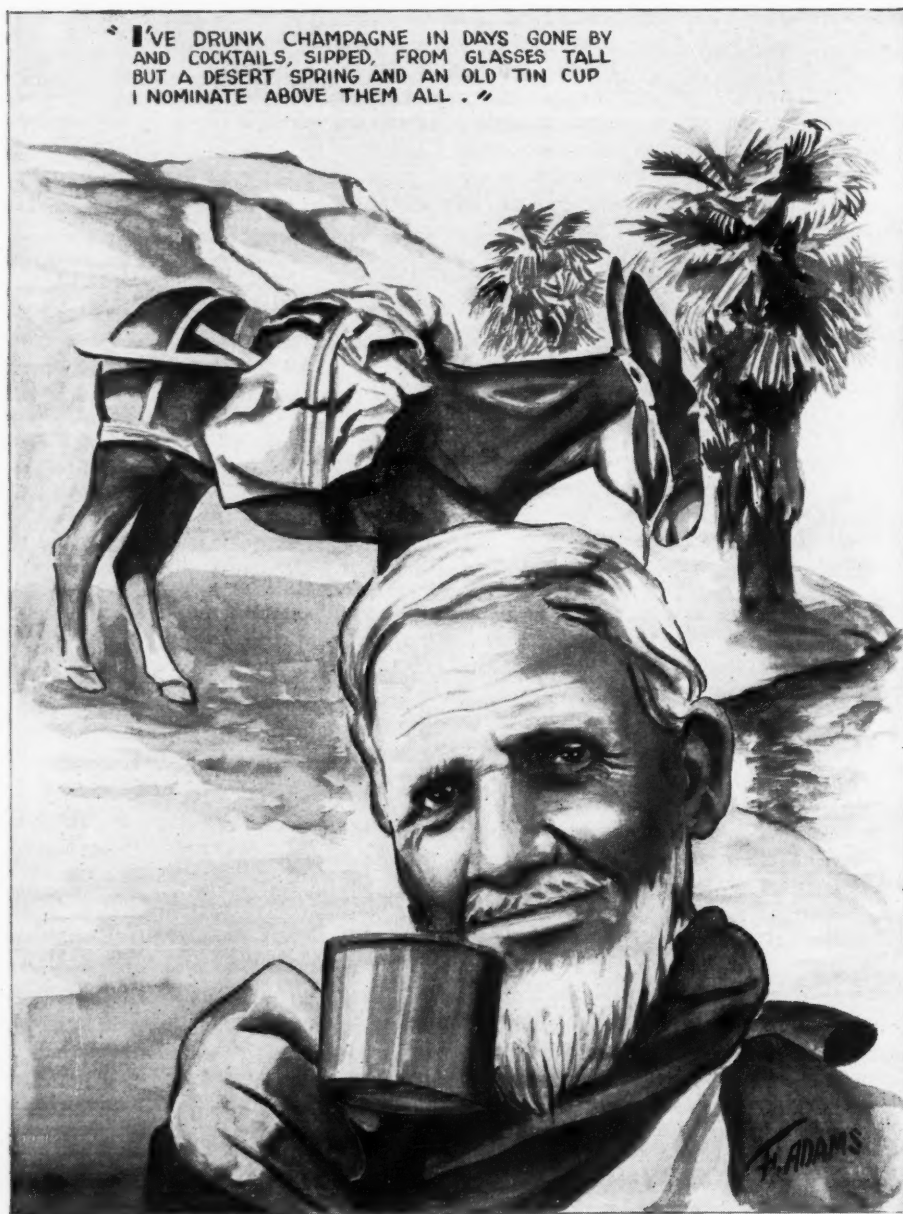
"I came into this land to see the country Major Powell wrote about." Old Pat died in his 90s, a few years ago at Maybell, and is buried at Lily park.

Major J. W. Powell undoubtedly saw Castle park in 1871 when he and two of his men poled up the Yampa from the Green river on the second of the Major's trips down the Colorado. Many outlaws, particularly the notorious Butch Cassidy, used Yampa canyon for years.

Castle park is a fascinating four-mile open stretch of a twisting canyon whose pinkish-brown walls vary in height from 150 feet at Lily park, the canyon's head, to 2000 feet at Warm Springs above Pat's Hole. The brown sandstone cliffs along Castle park are from 1000 to 1500 feet high. Approximate elevation above sea level at Mantle's, on the canyon floor, is about 5300 feet.

In May, 1940, we were visited by Hugo Rodeck. With him were Earl Morris of Boulder, Colorado, and Robert Burgh, his assistant. Morris, an authority on Basketmaker culture, thought the bottom of two occupation levels in our excavated cave might date as early as 500 A. D. This level showed a strong Basketmaker influence which probably had spread northward along the western slope of the Rockies into Utah. Later Indians, probably Ute or Paiute, had used the cave into modern times.

Mantle's ranch and Dinosaur monument are more than worth a trip, providing you love wild country, care for hospitable isolationists like Mantles, and have only a reasonable respect for your car. If you love your car, or worry overmuch about getting a new one, Charley's road into Hell isn't for you. The National Park service, however, still is considering building a good road into the canyon. Getting into the country should be easier in the future.



"I'VE DRUNK CHAMPAGNE IN DAYS GONE BY AND COCKTAILS, SIPPED, FROM GLASSES TALL BUT A DESERT SPRING AND AN OLD TIN CUP I NOMINATE ABOVE THEM ALL."

SOLILOQUY OF A PROSPECTOR

—By Frank and Dick Adams



The treasure was loaded in 15 carretas drawn by oxen for the trip north.

Maximilian's Treasure

By JOHN D. MITCHELL
Illustration by Bill Edwards

HERE is a story told in Texas and many parts of Mexico that the puppet Emperor Maximilian, placed on the throne of Mexico by Napoleon III, early foresaw that the empire was doomed. In 1866, according to this legend, 15 heavily loaded carretas, closely covered with canvas and drawn by oxen, left Chapultepec Castle in the dead of night and headed north. This was nearly a year before the empire fell and Maximilian was captured at Queretaro and executed with the Mexican traitors, Maramon and Mejia, at Cerro de las Campanas.

The caravan was in charge of four Austrians, close friends of the emperor, and guarded by 15 peons. After several forced marches, it reached Presidio Del Norte and crossed to Texas soil. At that time the border between the United States and Mexico was the goal for many desperate men. Mexicans who had collaborated too freely with the French were fleeing to safety beyond the Rio Grande, while ex-Confederate soldiers and other Southerners, distrustful of their fate at the hands of carpet-baggers from the north, were crossing into Mexico.

At Presidio del Norte, the caravan met six ex-Confederate soldiers from Missouri, who had ridden west over the Chihuahua trail from San Antonio. The Austrian in charge of the caravan inquired anxiously concerning the condition of the road. He volunteered the information that he had a valuable cargo of flour that he must deliver in San Antonio. When informed by the Missourians that the road was strewn with

When ill-fated Emperor Maximilian came from Austria to the throne of Mexico he brought with him, according to legend, a great personal fortune. Today at Chapultepec Castle one may see a gold-encrusted carriage, canopied bed, a few jewels and some pieces of gold and silver plate. What happened to the rest? Does it lie buried in Texas, east of the Horse Head crossing of the Pecos river, with 19 skeletons to guard it?

the bones of animals and dead men, and that every mile of it was infested with bandits and hostile Indians, he seemed greatly disturbed. He offered to reward the Missourians handsomely if they would turn about and help guard the caravan across the plains to San Antonio.

The Missourians, glad to avail themselves of the opportunity to replenish their rapidly dwindling funds, agreed. When the men and jaded animals had refreshed themselves the caravan pulled out from Presidio Del Norte with the six Missourians as scouts and outriders.

Everything went well for the first few days until the ex-Confederates had their curiosity aroused by the close manner in which the carts were guarded by the Austrians and peons. They were nearing the Pecos river when they decided to find out for themselves what the carts contained. They chose one of their number to make an investigation and report his findings. When the opportunity came the Missourian raised the canvas on several of the carts

and was astounded to find they were loaded, not with flour, but with gold coin, gold and silver plate, and chests of jewels. The ex-Confederates decided to kill the Austrians and the 15 peons and obtain the great treasure for themselves. At Castle Gap, 15 miles east of Horse Head crossing on the Pecos, the four Austrians and 15 peons were sound asleep after a hard day's march when the Missourians fell upon them and killed them.

After a hurried consultation the Missourians decided it would be unsafe to venture out on the plains with such a large treasure and only six men guarding it. They determined to take the gold needed for their immediate expenses, bury the rest and return for it when conditions were more peaceful. They dug a deep hole in the sand and dumped in the 15 cart-loads of money, gold and silver plate and the chests of jewels. The hole was partly filled with sand and the dead bodies of the four Austrians and 15 peons thrown into it. Then the carts, harness, and canvas were piled in and the whole set on fire, so the burial resembled nothing more than a burned out camp fire. The Mexican oxen were turned loose to shift for themselves in the marshes around the lake.

With their saddle bags bulging with gold coin, the six Missourians retraced their steps toward San Antonio to seek help of friends in recovering the treasure. One became ill and dropped out, agreeing to meet the others in San Antonio when he was able to travel. When he had recovered sufficiently to travel he came upon the mutilated bodies of his friends who had been killed and robbed for their ill-gotten gold.

The massacre left the one survivor sole owner of the great treasure. His horse was jaded and he was a sick man. However, he plodded on, evading Indians and bandits until he camped, by accident, with a band of horse thieves. During the night a sheriff

and posse swooped down upon them and the Missourian was thrown in jail with the horse thieves. He was seriously ill and secured the services of a doctor. The town lawyer was called in and finally secured his release from jail. But the doctor told him that his malady was incurable and that he had only a few weeks or months to live.

Before dying the Missourian made a rough map to his treasure, which was useless to him now and gave it to the lawyer and doctor. Many years later when the Indians had been rounded up and placed on reservations and the bandits were in jail or their graves, these two men took the map and went to Castle Gap to search for the

treasure. The lake had gone dry and wind-blown sand had changed the topography of the country. It was impossible to locate any of the points called for in the map or waybill the ex-Confederate soldier had given them many long years before.

As far as this writer knows, that was the only effort ever made to locate Maximilian's great treasure at Castle Gap, 15 miles east of Horse Head crossing on the Pecos.

DESERT QUIZ

This is the hour for the monthly test—to see how much progress you are making in your acquaintance with the Southwest. So get a pencil and relax in any easy chair. Don't make hard work of it, for St. Peter doesn't put any black marks against you for the quiz questions you miss. Anything less than 12 correct answers is a tenderfoot score. 12 to 15 is good, 15 to 18 excellent. If you get more than that you are very smart or very lucky. Answers are on page 36.

- 1—On a camping trip on the desert the proper way to dispose of your camp garbage is to— Dump it in the nearest arroyo..... Burn it in your campfire..... Dig a pit and bury it..... Leave it on a rock for the garbage collector to pick up.....
- 2—Tallest tree native of the Southern California desert is— Mesquite..... Palo Verde..... Joshua..... Palm.....
- 3—Death Valley was given its name by— Members of the Bennett-Arcane party..... Death Valley Scotty..... Jedediah Smith..... Pacific Borax company.....
- 4—Indians who call themselves "Dine" meaning "The People" are the— Yumas..... Navajo..... Hopi..... Apaches.....
- 5—The famous Mormon battalion was recruited to— Aid the conquest of California..... Help colonize Utah..... Open a new Northwest trail..... Guard the Santa Fe Trail.....
- 6—The astronomical name for the North Star is— Venus..... Jupiter..... Polaris..... Mars.....
- 7—Javelina is a name commonly used in the Southwest for— A spear-like weapon used by the Cocopah Indians..... Birds that nest in fissures in the rock..... Member of the lizard family..... A species of wild hog found in southern Arizona.....
- 8—If you were going from Winslow, Arizona, to see the Hopi Snake dances your general route would be— South..... East..... West..... North.....
- 9—The Navajo Indian reservation extends into all but one of the following states— Nevada..... Arizona..... Utah..... New Mexico.....
- 10—Mesa Verde National Park is best known for its— Geysers..... Waterfalls..... Caves..... Indian ruins.....
- 11—Ed. Schiefflin was the name of a man credited with the discovery of— Gold at Goldfield..... Silver at Tombstone..... Potash at Trona..... Casa Grande Indian ruins.....
- 12—The ingredient most common in the sand generally found in the floor of the desert is— Quartz..... Manganese..... Mica..... Hematite.....
- 13—Most exhaustive written works on the Anza expedition were prepared by— Bandelier..... James..... Bolton..... Hornaday.....
- 14—The Wasatch mountains are visible from— Las Vegas, Nevada..... Salt Lake City..... Tucson, Arizona..... Albuquerque, New Mexico.....
- 15—Tuzigoot is the name of— A Ute Indian reservation in Utah..... A national monument in Arizona..... A river that flows into Great Salt lake..... A weapon used by the Cahuilla Indians for killing rabbits.....
- 16—If you wanted to spend a night in Fred Harvey's La Fonda hotel you would go to— South rim of Grand Canyon..... Ogden, Utah..... Santa Fe, New Mexico..... Palm Springs.....
- 17—The blossom of one of the following desert trees is creamy white— Mesquite..... Smoke tree..... Palo Verde..... Joshua tree.....
- 18—John Hance was— Governor of New Mexico..... A guide at Grand Canyon..... The discoverer of Carlsbad caverns..... A Mormon missionary.....
- 19—On a westbound trip across the Southwest desert, when you crossed the Colorado river at Topock you would be entering— Nevada..... Utah..... California..... Arizona.....
- 20—Next to English, the language most commonly heard among dwellers of the Southwest is— Spanish..... French..... Portuguese..... Chinese.....

Hard Rock Shorty of Death Valley



"The laziest man I ever knowed was slower than a sand dune in July," remarked Hard Rock Shorty.

"Pisgah Bill and me found this feller sittin' in his old car which looked like a batch o' 17-year locusts had nested in it two seasons. We asked him where he was bound. 'Nowheres,' he said. He stopped because he didn't need nothin' so why should he go lookin' for somethin'? He had a box of eggs for grub and a can of water to drink. 'You don't need much to eat and drink if you don't move much,' he says.

"I seen he was parked right in the path of one of them marchin' sand dunes. I warned him that marchin' dune would catch up with him in a couple of weeks. 'Let it march,' he says. He didn't care. He didn't have anywhere pressin' to go. 'Furthermore,' he says 'if camels and turtles can live buried in sand, so can a superior bein' like man.'

"Me and Pisgah figured we'd done all we could for the crazy critter, and left him dozin' beside his box of eggs. It was four, five weeks before we went back that way, and there set that lazy good-for-nothin' in the same place we left him. That sand dune had marched right over him and was just leavin' and that feller was shakin' himself free of the sand which had settled on him.

"He told us he was glad things happened the way they did. He'd had a nice long rest. He'd proved man is the equal of hibernatin' animals like turtles, and that box of eggs had hatched him out the finest batch of little fluffy chicks you ever seen, which wouldn't have happened if he had et the eggs in the first place.

" 'It sure beats gallopin' like mad all over the country,' he says."

Pictures of the Month...

Roan Horses' Son

First prize in Desert's February contest was awarded to this photograph (right) of a stately Navajo elder. The picture was made by Russ Eckerstrom, Santa Barbara, California, using a Speed Graphic camera and Super XX film. It was taken at 1/25 sec., f.22, through a G filter.

Special Merit

Many splendid pictures were entered in Desert's February contest. Outstanding among them were:

"River Silhouette" by Jack Yeakum, Parker, Arizona.

"White Sands, New Mexico" by Mal Vaughn, Santa Barbara, California.

"Sentinels" by Will Bragg, Santa Barbara, California.



Bisnaga Blooms

Nicholas N. Kozloff, Jr., San Bernardino, California, tied for second place with the photo (left) of a crown of blooms around the head of a barrel cactus. Photograph was taken with a 4x5 Speed Graphic on Super XX film, 1/25 sec. at f.22.

Moonlight Oasis, other second prize winner by Don Ollis, Santa Barbara, will appear in a later issue of Desert Magazine.



Hashkibanzin, last chief of the Aravaipa Apache, called Eskiminzin by the whites, survived the Camp Grant massacre with one baby daughter. His

two wives and five children died. The girl, left, may be the baby, Chita. Photo from Arizona Pioneers Historical society collection.

Apache Ghosts Guard the Aravaipa

There are many dark pages in the history of American dealings with the Southwestern Indian, but none is blacker than the Camp Grant Massacre in Arizona Territory. Here is the story of that grim morning in 1871, as Old Lahn the Apache told it to Richard Van Valkenburgh while they stood on blood-soaked ground where stone piles mark the burial place of 112 Aravaipa women and children—and six Aravaipa men.

By RICHARD VAN VALKENBURGH

MOTIONING eastward across the wide green sweep of the San Pedro river valley toward a shadowy canyon that faded into the stepped benches of the Galiuro Range, Old Lahn, the Apache in whose acorn harvest camp I was visiting near Oracle, Arizona, said, "That canyon, which we call the Little Running Water, must be the place of which you speak."

Until this writing the Camp Grant Massacre of 1871 has been recorded only from the white man's viewpoint. And hoping to get the Indian story I persuaded Old Lahn to guide me to the scene by promises of the mineral that all old Apache cherish, turquoise-blue azurite.

Half-way down the grade that drops from Oracle and snakes its way through copper-colored hills toward the old mining camp of Mammoth, old Lahn called for a stop. And after we had climbed to the summit of a rocky knoll he said, "My story begins at the base of that shaggy red ridge which drops off toward the river bottoms."

"Our trouble started just before the white man came to this country. While our neighbors to the north, the Pinal Apache, raided the Mexican settlements the Aravaipa Apache, whose name was *Tséjine*, the Dark Canyon People, were content with their farming and hunting and were the most peaceful of the Apache."

"It was in the time when the saguaro fruit was ripening. Mexicans from Janos, Sonora, caught three Aravaipa Apache women while they were gathering willow for baskets in the river bottoms. The Mexicans were looking for the band of Apaches who had killed seven of their men and had stolen a girl called La Niña Ynez in La Cañada Coscospera."

"Fearing that the Aravaipa might be blamed, the women guided the Mexicans away from the camps on the Little Running Water and toward the Santa Catalina mountains. But in some way the Mexicans found out they had spoken with forked tongues. Sticking lances in their backs they left them lying in the chaparral to die."

"When night came those in the camps knew something had happened to the women. A man named Gotchtla went to search for them. When he found them, two were dead. The other breathed long enough to tell the story. Today one can go down under that ridge and see where Gotchtla piled stones over those women's bodies."

"Before dawn streaked the ground Gotchtla had returned to the Little Running Water. When he told the news to the old chief, Santo, he was angry as he said, 'These *Na'kaya* have killed our women with no cause. We will hide by the trail that comes down from the west and kill them all.'

"But *Hashkibanzin*, Angry-Men-Stand-In-Line-For-Him, whom the white men later called Eskiminzin, spoke, 'No! That is

not the way. We will leave the Little Running Water and go into the Santa Teresa mountains. From there we will raid and take blood revenge for these women who were our relatives."

"Sadly leaving ripening crops to rot in the fields the Aravaipa trekked eastward. Following the well worn trail that passes through the narrows of Aravaipa canyon, they traveled for two days before reaching the shadowy canyons that lie under the blue peaks of Santa Teresa mountains."

Old Lahn fell silent, and we returned to the car. A steep grade and sharp turn to the left dropped us into Mammoth. Dodging the burros dozing in the middle of the street of the town which was taking its siesta in the midday sun, we passed through and traveled north on the paved road leading down the San Pedro to Winkelman, Arizona.

Once through Mammoth, Old Lahn picked up his story, "Soon afterwards, white soldiers came into our country. News reached the Aravaipa still hiding in the

Santa Teresa mountains that the white Nant'an (chief) wanted to hold a peace council near the present Loma Vista ranch by the Cañada del Oro.

"Hashkibanzin talked with Santo a long time before the old chief agreed to go. His trust in the white men was never strong. After issuing corn, copper wire, and red cloth, the white Nant'an said, 'We have taken this country away from the Mexicans. Now we are going to build a fort in your country so that you will stop killing each other.'

"And Hashkibanzin answered, 'C'Enju, 'Tis good. We will stop killing Mexicans when they stop killing Apaches. We will now return to our fields by the Little Running Water. And when they hear of this the Papago, Apache Manso, and Mexicans around Tucson will come to kill us. You must stop them if there is to be peace!'"

As nearly as I can determine this Council of del Oro took place in 1855. Two years later Fort Breckenridge, which later became Old Camp Grant, was built at the

juncture of Aravaipa creek and the San Pedro river. And for the next 16 years this malaria infested post played its dramatic part in Arizona's frontier history.

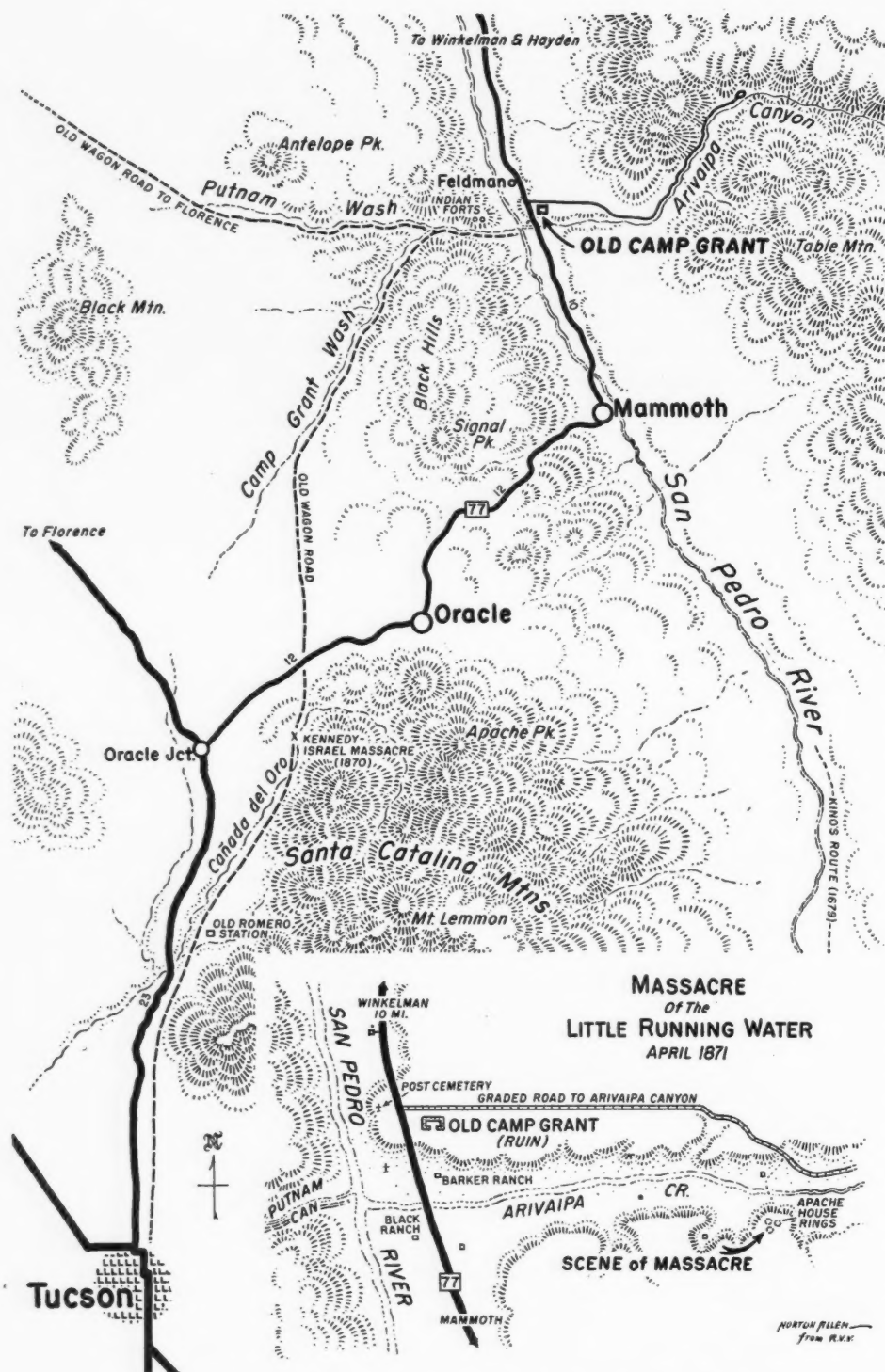
After following the east bank of the San Pedro for seven miles we dipped across the concrete apron that girds cottonwood-lined Aravaipa creek and climbed to the summit of a low rise on which the adobe quadrangle of Old Camp Grant once stood. Now nothing but piles of adobe, almost hidden in a forest of giant cholla, remain to mark the location of this long deserted post.

Our loot after a half-hour's prowling through the ruins totaled a few plainware pottery sherds, some old Henry rifle shells and four oxen shoes. Then taking the well graded Aravaipa canyon road we traveled three miles toward the east before Old Lahn grunted for a stop.

Leaving the car we climbed to the summit of a low ridge. As we looked down across a small valley through whose desolate sun-burned flats there slashed a wide

Renegade Aravaipa Apache warriors held prisoner at new Camp Grant for an attack on a wagon train. Later three were hanged. Photo from the Arizona Pioneers Historical society collection.





arroyo, the old Apache said, "'Tis where the waters of the mountains sink into the sand—where once there flowed the Little Running Water!

"Seventy-five years ago it was not like this. T'was a land of beauty—through which flowed a stream of cool blue water. Along its tree-shaded banks were the campfires of our 50 *gata* or family clans of Hashkibanzin's people, the Aravaipa Apache."

The old Apache started down a game-trail heading toward the bottom of the valley. As we ploughed across the powdery sand of the arroyo I could see he was heading toward the white bluffs of a mesa that

benched off and projected from the main bulk of the tablelands to the south.

After cooling off for a few moments in the shade of a thirsty looking cottonwood, Old Lahn entered a fissure that knifed up into the bluff. Fifty feet of climbing through the crumbly conglomerate brought us over the rim. Before us spread a grass covered flat ten acres in size.

As I watched the old Indian's eyes fixed on some circular rings of stone. Sensing that this was not the time to ask questions, I checked my curiosity and followed as he carefully avoided the rings and headed for the shade of a palo verde tree.

For some time I doubted if he was going

to talk. But after a couple of cigarets he relaxed. Squinting at the sun, sloping down into the western sky, he muttered, "We will leave before dark. When I tell you of what happened here you will know why."

"After the white soldiers built Camp Grant, which you can see from this flat, never again was there any peace for the Aravaipa. They brought whiskey. And among them were evil ones who hunted Indians for sport—like deer. We soon learned that there were as many bad white men as there were bad Mexicans!"

History definitely verifies Old Lahn's statement. Barrels of "rot gut" were an important item at the post sutler's store. Furthermore—between 1857-1870 no less than 50 Aravaipa men, women and children were killed ruthlessly by miners, adventurers and soldiers for no other reason than that they were "Injuns."

"Then came a time when Santo and Hashkibanzin stopped their people from coming down here to the Little Running Water to plant crops. For years the Aravaipa lived like hunted beasts in the Santa Teresa and Galiuro ranges. And—against Hashkibanzin's wishes—some young men did accompany the Pinal on raids, lest they starve."

"Then came news that there was a new white *Nant'an* at Camp Grant. It was four moons before the chiefs agreed to ask for peace. Hashkibanzin won because he said, 'It makes no difference where we die. I'd rather we be killed down by the Little Running Water than have death sit beside us here in the mountains!'

"With suspicion deep in their hearts the Aravaipa sent five old women, one of whom was Hashkibanzin's mother, to Camp Grant to ask for peace. The old women were treated kindly. In two days they returned with the news that the *Nant'an* would hold council with the chiefs at the rising of the fourth sun."

History records that this new *Nant'an* was Captain Royal E. Whitman, of the 3rd U. S. Cavalry, who had been detailed to Camp Grant in the winter of 1870. No green shavetail, Whitman was mature in military experience, having risen during the Civil War from the ranks to a lieutenant-colonel of volunteers.

After six months of quiet investigation Whitman had become definitely sympathetic to the Aravaipa. He learned that these most peaceful of the Apache were being needled into hostility by sinister forces in Tucson who planned their extermination as a means of grabbing their fertile agricultural lands and fabulously rich mineral deposits!

It was Whitman's idealistic dream that among civil and military authorities would be some men who would help forestall this plot by aiding in his plans for pacification of the Aravaipa. With this in mind he was anxious for the band to return to their homes by the Little Running Water.

"On the rising of the fourth sun, Santo,



Apache women, like these, were massacred by Americans, Mexicans and Papagos as they slept beside the Little Running Water. Photo taken about 1880. From the collection of Arizona Pioneers Historical society.



Maggie Black, Aravaipa pioneer since 1889 and her granddaughter Christine show examples of Apache basketry. The small basket was presented to Mrs. Black by the son of Hashkibanzin. Van Valkenburgh photo.

Hashkibanzin and the sub-chiefs walked into Camp Grant. After a long *yoshidii*, or council, it was agreed that the Aravaipa would surrender their weapons and be placed under the protection of Captain Whitman and his soldiers. When they had finished, Hashkibanzin laid a large rock on the ground before the *Nant'an* and said:

"We have faith in you. You have spoken to us like men and not dogs. I shall bring my people to you. And so long as this stone shall last the Aravaipa Apache will keep peace with the Americans!"

"Smoke signals puffed into the sky. In a few days over 500 Aravaipa straggled in from the mountains. After surrendering their weapons and placing their names on the census roll, the *Nant'an* told them that they could return here to their old homes by the Little Running Water.

"Then came the day when the *Nant'an* called Hashkibanzin to Camp Grant and said, 'Your people have been home for two months and have kept the peace. They have worked hard and their crops are growing. In two suns from now, which will be the white man's first of May, we will have a fiesta and barbecue.'

"But even with this good news Hashkibanzin's heart was heavy. Maria Jilda Grijalva, his good friend and the *Nant'an*'s interpreter, had whispered bad news into his ear. Just a few days before, some Pinal Apache who had passed through the Aravaipa camp, had raided and killed an American near Mission San Xavier.

"The young people, unaware of the bad news, began to dance—right on this flat that spreads before us. As the voices of the singers echoed up and down the canyon the Aravaipa, young and old, came to

watch the dancers as they moved back and forth in the glow of great fires.

"Hashkibanzin was still uneasy at the news from the Santa Cruz and did not join the dancers. Going through the crowd he tried to make the watchers return to their camps, on those high bluffs above us, and be alert. But believing that they were protected by the *Nant'an* at the nearby fort they paid no attention.

"Only when the moon had passed across the southern sky to drop into the west did the exhausted dancers lie down on the ground and go to sleep—the men on this side and the women on the other as was custom. Slowly the fires burned down, flickered and then died in the darkness that follows the moon.

"From out of the east came the first light of Blue Dawn Boy. Not a leaf fluttered in the mesquite. Then way down canyon there was the warning twitter of the vermilion flycatcher. Creeping through the shadows toward this place were the *Saikine*, or Sand House People, whom the Americans call the Papago.

"Silently they crept up the bluff—over the very trail we just climbed. Like jaguars they crouched to spring. Then from those rims above flickered the signal. Moving swiftly with their mesquite war clubs loosened they surrounded the sleeping dancers. Striking in every direction they began to smash the skulls of the sleeping Aravaipa.

"The screams of the dying ripped open the clear morning air. Roused from his sleep, Hashkibanzin ran from his *kowa* or wikiup, toward the dance ground. And as he yelled for his warriors to stand and fight, a Papago club crushed his head. Crumbling, he fell to the ground amidst the slaughtered bodies of his people.

"After finishing those on the dance ground the Papago began to hunt out those in the *kowas*. That's why I avoided those stone rings over there—for they are places of death. And from that rim above Americans and Mexicans shot down those who tried to flee up-canyon. Yes! There were Americans from Tucson there. We found out later that they were the ones who planned the whole thing!"

What Old Lahn charges is verified in the *Tucson Citizen* for May-June, 1871. Inflamed by the succession of bloody Apache raids along the Santa Cruz valley, citizens of Tucson headed by Wm. S. Oury and Jose Juan Elias had enlisted the aid of the Papago chief, Francisco, and 92 of his warriors in taking vengeance on the nearest Apache available—the peaceful and unarmed Aravaipa.

"And when those human wolves with black and white skins got through with their killing they set fire to every *kowa* they could find before starting back toward Tucson. They circled Camp Grant so that the *Nant'an* and his soldiers would not know what they had done. They carried into captivity 29 Aravaipa children!

"The buzzards were beginning to circle when something stirred under a pile of the dead. Pulling himself loose, Hashkibanzin tried to shake the dizziness from his bloody head as he staggered across the dance ground toward his *kowa* that stood under the cottonwoods which we passed before starting to climb the bluff.

"His *kowa* had not been burned. But before him on the ground lay the bodies of his two young wives and their five children! Then from under a bundle of grass he heard the whimper of a baby. Bending

over he pulled back the grass and picked up his only living child—the tiny Chita!

"With the baby in his arms he avoided the dance ground and followed the rims until he reached that high point which noses so sharply down into the canyon.

"Turning back to look down on the scene of the massacre of the Little Running Water, Hashkibanzin, the last of the Aravaipa chiefs, breathed a curse of vengeance against all white men!"

There is no rose-tinted ending to this version of the Camp Grant Massacre. When the news reached Captain Whitman he immediately went to the scene. There he found and buried the bodies of 118 Aravaipa Apache—most of them on the dance ground. Of the dead only six were men—the rest were women and children.

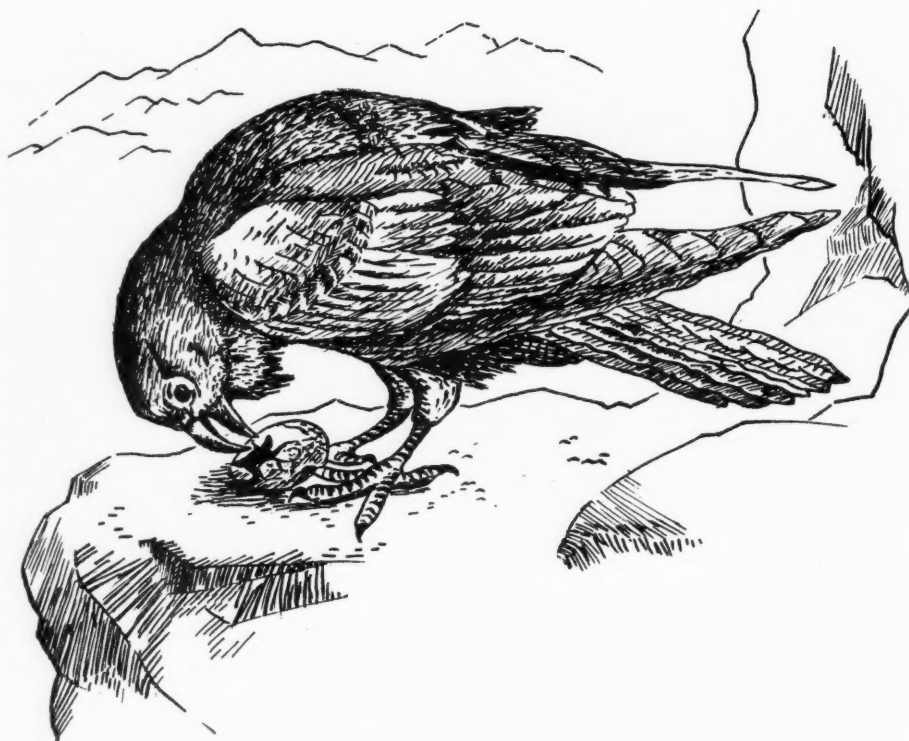
A ripple of indignation swept the nation. Under the pressure of President Grant's threat of martial law Wm. S. Oury, Sidney de Long, Jose Juan Elias, and about 100 Americans, Mexicans, and Papago, stood trial for the massacre in the federal court in Tucson, A.T. Tried by a jury composed of citizens who believed "the only good Injun was a dead Injun" they were quickly acquitted.

The victims paid. Captain Whitman was defamed as a drunkard and grafter by the local citizenry until removed from his command. And until the day of his death at Old San Carlos in 1896, Hashkibanzin, the chief who never really wanted to fight the Americans, was continually harassed by both civil and military authorities.

We hope that Hashkibanzin in his Apache heaven knows this: There were white men who participated in this massacre who were haunted to the day of their death by the screams of dying Aravaipa women and children. Sidney de Long, in the latter days of his life, once said that the only thing he ever regretted in his life was his part in the Camp Grant Massacre.

Today this once lush and fertile garden spot, where not so long ago dwelt happily the Aravaipa Apache, is a brown and desiccated land. Along the parched arroyo, where water runs no more, lie the dehydrating carcasses of drouth-stricken cattle. Sagging rottenly by overgrown fields are the ranch houses of those who tried to make a crop in this blood-soaked ground and failed.

On a little mesa just above these fields are piles of stone which marks the graves of the Aravaipa. Possibly what Old Lahn said as we were leaving has come true, "Tis a place accursed to white men forever by those who really own this land—the ghosts of those who died in the massacre of the Little Running Water."



Part of the time he is a dignified sort of a scavenger, and at other times he assumes the role of aerial acrobat and does all manner of stunt flying for the entertainment of his mates. He is one of the birds who haunt the des-

ert country, and his name is raven, although he often is mistaken for a crow. Here Edmund C. Jaeger, well known desert naturalist tells about the life and habits of this bird—and how you may identify him.

Old Man Raven

By EDMUND C. JAEGER
Sketch by the author

ONE OF the questions desert visitors most often ask me is: "Are those big black birds I see on our desert crows or ravens?" And when I reply: "Most certainly ravens," the questioner continues with the additional query: "Well then, what is the difference between a crow and a raven?" The answer is not difficult.

Crows are seldom if ever seen on our California deserts. Crows stay in the low mountains and in the valleys of the coastal plain, leaving the desert as the sole domain of their larger cousin, the raven. Crows generally are seen in flocks. Ravens usually are seen as solitary birds or in pairs. Occasionally one may observe them gathered in small companies of four, five or even fifty. Groups of four or five are generally family parties, parents and near grown offspring. I once saw 16 gathered to feed around a cow corral near Ivanpah and a party of as many as 30 feeding on a carcass in a similar place near Victorville, California.

There is so much difference in the flight of the two birds, once you learn to recog-

nize the flight of the comparatively small crow you will never mistake it for that of the big-bodied raven. In flight the crow's wing tips turn upward much like the turkey buzzard's. The raven carries the entire wing horizontally. The crow rather rapidly and steadily flaps its wings and seldom soars. The raven flies with more deliberate wing strokes, and often in hawk-like manner, alternately flying and soaring.

The raven's call note too is distinctive. In contrast to the crow's somewhat metallic *caw*, we hear a definite croak, a "woody" guttural *cr-r-uck*. It is doubtless this strange, throaty note of the raven that gave it its scientific name *corax*, that being the Greeks' imitation of its call. Nor does old man raven talk as much as the more social and gregarious crow. He is anything but a noisy bird. You could never say that about the crow.

It is hard to imagine this bird, so at home in arid lands and such a lover of solitude, as a jolly play-fellow, acrobat and prankster. Yet that is often the role he assumes. In early spring when ravens gather in small groups and you see them show off

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in aerial somersaults, erratic glides and rolls you suspect that behind the usual look of glum awkwardness lies a brain that revels in high jollity.

Last spring I saw one of the raven circuses, in which every actor is alternately clown or interested spectator. This was far out on the Mojave desert southeast of Soda lake where lies a remarkable deposit of cinder cones and lava flows. Twenty-eight birds comprised the company of players. One after another they took off from the rocks to go through their series of strange aerial antics, each bird seemingly trying to out-exhibit his fellows. They glided, pitched, turned, rolled over and swung in wide circles. After a few moments of such activities the performer would return to perch on the rocks and watch in evident satisfaction the antics of the others.

From eight to 15 of the birds were in the air at a time. The most exciting trick was the roll in which the bird would dart downward and then suddenly turn the body half over and for a moment fly upside down, then roll over the rest of the way before continuing onward in ordinary flight. Sometimes they would both teeter and roll, then make a grand swoop upward. That the birds were all the time in state of high merriment there could be no doubt.

I don't know how long this show went on. The ravens were at their play when I arrived at 10:30 in the morning and the skilled exhibitionists were still maneuvering, rolling and tumbling when I left an hour and a half later. I had a ring-side seat at a desert bird circus I may never see again and which I certainly will never forget.

It was a noisy affair with all sorts of queer sounds and unusual notes—noises and warbles you would never suspect could come from the raven's feather-decked throat. The time of mating was at hand, a time when most birds do many strange things not a part of their normal routine. The raven is no exception.

Ravens like crows are wary birds. They take no chances at being caught off guard. Often they allow you to come quite close. Then just as you are about close enough to get a photograph they fly off.

We see them most often along roads and railroad tracks where they feed on the carcasses of rabbits and other animals killed during the night by autos and trains. Driven by an almost insatiable hunger, the big birds begin to fend for food early in the morning. Then they fly close to the ground hoping thus to pick up small animals such as lizards, baby rabbits, young birds and bird eggs. They are good though awkward walkers and comb the ground for crickets, grasshoppers and other small dwellers of the dust and sand.

Because they eat eggs, ravens are not popular with smaller birds. I have seen fly-catchers, sparrow hawks, mockingbirds, and hummingbirds go after ravens



The raven acquires his insatiable appetite early in life. Photo by George M. Bradt.

with all the fury at their command. With bill snappings, menacing calls and dashing flight they let the ruthless old robbers

know what they think of their bad manners and evil ways. The raven goes doggedly on his way showing little concern over their pigmy efforts to drive him from their midst.

In desert areas ravens generally choose to build their nests on high rock ledges quite inaccessible to intruders, including man. The outer bulky nest is often a huge low basket of creosote sticks and twigs. The lining which in former days was made of leaves, hair and bark shreds is now, since the advent of litter-casting man, often made of bits of old soiled paper, rags, and other refuse.

Peculiarly the American raven, so widespread over continental United States, is much more numerous on the high Mojave desert than on the low Colorado desert of California. In southeastern Arizona's yucca lands there is a much smaller species, the white-necked raven, so-called because the basal ends of the feathers of the neck and breast are white. But this white is seen only when the feathers are ruffled by the strong desert wind. The call note of this raven is not a coarse *cr-r-uck* like that given by the ordinary raven but a distinct *cr-aak*.

Your Best Desert Photo

may be the one we're looking for! If you have a striking picture of desert people, desert life, desert scenery, desert plants or animals—why not submit it in Desert Magazine's monthly photo contest?

First prize is \$10, and second prize \$5. For non-winning pictures accepted for publication, Desert will pay \$3 each. Entries for the April contest must reach Desert Magazine office in El Centro, California, not later than April 20, and winning prints will be published in the June issue. Pictures arriving after that date will be held for the May contest.

HERE ARE THE RULES

- 1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED ONLY WHEN RETURN POSTAGE IS ENCLOSED.
- 4—All entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

ADDRESS ALL ENTRIES TO PHOTO EDITOR, DESERT MAGAZINE.

THE *Desert* MAGAZINE
EL CENTRO, CALIFORNIA



In the badlands country described in this story. Photo by L. B. Dixon.

Desert Trails

By MARSHAL SOUTH

"He who seeks for that upon which the Ancient People have placed a curse, follows a trail to death."

—Old Indian saying.

THE DESERT region which was once the bed of the ancient upper reaches of the Vermilion sea—now known as the Gulf of California—is a weird and fascinating area. Civilization and progress, though they have pressed upon it roads and canals, have not destroyed its mystery.

The early Spaniards who toiled across these scorching wastes brought back fantastic tales of mirages and phantom ships. And you can, if you are lucky enough to find the right desert rats, still hear weird tales. Particularly is this true of the so-called badlands—the desolate section of eroded clay hills which lie upon the desert like a vast goblin relief map, the haunt of all the devils of desolation and of burning thirst. I have heard some strange tales of these badlands and have seen some queer things found in them from old iron cooking utensils, of curious design, to arrowheads, bits of Spanish armor and stone age axe heads.

My own contribution to this legendary material is strange enough, and thoroughly in keeping with the atmosphere of the region. Until a few months ago I could not have told the story. Now, however, the man whom it chiefly concerns, the last of an old Mexican family, is dead. There is no longer any reason for silence.

This is the tale of a lost mine. But the mine is not in the desert badlands. It is in Mexico. And it is still lost. The location of "*La mina del tortuga de oro*"—the mine of the golden tortoise—is probably lost forever.

The story begins in the city of Guadalajara, which is the capital of the Mexican state of Jalisco. Years ago when Don Porfirio Diaz was president of Mexico and Don Miguel Ahumada was *gobernador* of Jalisco I was in Guadalajara. And while there I made the acquaintance and became the fast friend of a brilliant young Mexican of high family whom we will call Fernando Suarez—because that is a name which does not even faintly resemble his real one.

One afternoon as we sat on a bench in the Guadalajara plaza, watching the Mexican army officers and important looking civilians who drifted in and out of the doorway of the *Palacio de gobierno*, Fernando Suarez told me the story of a lost mine. At the time, I had the feeling that he was mixing fact with fiction. But I have since changed my mind.

According to Suarez the ancestors of his family had come over to Mexico at the time of the Conquest. And, like most Spaniards who had a nose for Aztec gold and the source of its supply, they had been interested in mines. One of the mines which Suarez' ancestors had located—or rather had persuaded the Indians to reveal—was *la mina del tortuga de oro*—the mine of the tortoise of gold. He said it was very rich, and sacred to the Indians. It was located somewhere in the mountains in the region which is now the Mexican state of Michoacan. "For many, many years," Suarez continued, "my ancestors had in their possession the little gold tortoise from which the mine took its name. It was of very ancient Indian workmanship and not pretty to look upon. In fact it is—how shall we say—the bad luck."

The Suarez family never actually had worked the mine, although through Indian channels they had received considerable gold from its ledges. Its location was given on a piece of parchment which they had acquired from unrevealed sources.

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Finally, when members of the family set out to locate the source of the gold they found the directions confusing. They tried many times, but always failed, and eventually the parchment was lost. But the ugly little gold tortoise (the *tortuga*) that seemed to embody the bad luck—or maybe the Indian curse, as Suarez said meditatively—stayed merrily on with the family. Suarez had often seen it in his youth. "It always," he said, "seemed to leer at me. It was an ugly thing, even though made of gold."

The family fell upon evil days. Eventually Suarez' father, who was a government official, was given a post in Baja California and the family moved to residence close to the United States border. The little gold tortoise went along. Accompanying them was an uncle, a brother of Suarez' father. "He was," said Fernando feelingly, "a devil of the first class, with neither conscience nor regard for God or man. A thorough scoundrel." This uncle, Ramon, had the habit of going over, with painstaking care, all the old family records and documents—of which there were many. "This," said Suarez, "was the only work that he ever did in his whole worthless life." He made no secret of the fact that he was trying to unravel the clue to the lost mine. But by that time it was not seriously regarded. The years had dimmed its lure, and the family was wearied and crushed by troubles.

One day Uncle Ramon disappeared. And with him the gold tortoise. He left a sarcastic note saying he had discovered the clue to the lost mine—a map on a bit of parchment pasted between the leaves of an ancient book—and that he was going to be rich. Also that all his relatives could go to the devil. They wouldn't see him any more.

Which was the actual truth. They never did. Uncle Ramon apparently vanished from the earth. For long it was supposed that he had gone to Michoacan, where legend said the mine was located. But all inquiries failed to bring any trace of him—or of the golden tortoise. "The Indian curse of bad luck," said Suarez, dramatically, "undoubtedly dissolved him into the incomparable dust of hell."

So ended the story that was told me in the sunny plaza of Guadalajara. Some time later, after I had left Mexico, my friend Fernando Suarez, choosing his allegiance unluckily among the many factions of Mexico's revolutionary days, was shot against an adobe wall in a sleepy little town in Sonora, a hundred miles south of the U. S. border. I mourned him sincerely. He had been a dear friend and he was a brave man. I often wondered what had become of his little son, Pablo, whom I had known as a bright, eager boy.

The years passed, with their trail of lights and shadows—joys and troubles. Long years.

And then, one day, nine months ago, in the little town of Julian, California, a bright, athletic man walked in the door. I knew he was a Mexican. And in that same glance, before even he uttered a word, I wondered where I had seen him before. There was a something . . .

He greeted me by name and held out his hand. "I have read your articles for a long time," he said, smiling. "I know you. You knew my father."

"Pablo!" I exclaimed, startled. "Impossible!—can it be that you are really . . ."

"But yes," he said, gripping my hand hard. "It is true. I am Pablo—the little boy whom you knew so long ago in Guadalajara. And I have things of importance for your ear alone. Where can we talk?"

We found a place to talk. And he talked swiftly and convincingly. That evening I left Julian with him in his car. It was an expensive one and powerful. Apparently he was not a poor man. But he told me frankly that the things I saw and judged by were about all. His finances were all but exhausted.

We camped that night in a desolate section on the edge of

the desert badlands. If I am vague it is because I wish to be. This thing is now over and done. I will be no party to subsequent searchings. Hunters could find nothing. But they might possibly find death. The badlands are still bad.

We started walking in the early dawn—when the light was still ghostly and mysterious and the stars were still faint slivers of diamonds in a grey sky. Across the forbidding tangle of sculptured clay hills that lay before us Pablo Suarez extended a dramatic, pointing arm: "Uncle Ramon came here," he said. "He did not go to Michoacan. He was a scoundrel—and he feared to go too soon to the mine. But there were other scoundrels whom he feared also. All my life I have sought the clues. And I found them. Now we shall soon see if they are true."

We walked—scrambling and toiling on through a goblin land of eroded desolation. Dawn came and the sun. The badlands are not a pleasant place for walking exercise—especially when the sun warms up. Somehow those weird hills and ridges of glaring clay, carved and sculptured by ages of wind and rain grow upon you with a feeling of awful loneliness. They are devoid of life almost. Here and there there may be a scraggly scrap of burrowed or a lone tuft of desert holly. But over all is death and barrenness. We had brought canteens of water and Pablo Suarez carried a small light shovel.

By what particular landmarks Pablo steered I do not know. But early in our tramp I discovered that he was steering a course—and a very precise one. He had told me casually that he was, by profession, an engineer and a surveyor. And I now thoroughly believed him. His clues and information apparently were very definite. He never faltered. Almost he seemed to be using a sixth sense. At one point, towards evening, we cut across a curved section of what was plainly a very ancient trail. There were some pieces of broken pottery to one side of it. And just where it vanished into nothingness on the edge of a scoured out storm channel there was a greyed piece of wood, set like a post, in the side of a clay bank. It was very old and weathered and there was a rusted bit of metal driven into it. It might have been an old knife blade.

Pablo Suarez, however paid no attention to the trail. He was evidently short cutting. He could walk faster than I could and he seemed all muscles and nerves, like a bloodhound on a hot scent. By nightfall we came upon the almost unrecognizable foundation traces of what had once been a little hut. It was in the desolation of a dreary gully. "This," said Suarez, wearily, "is the place. But first we must sleep."

By the first streaks of dawn the following morning he selected a place near what had evidently been the old chimney and began to dig with his little shovel. The thing is uncanny, but he struck the old metal box exactly. It was badly rusted and the lid crumbled in his hands as he lifted it from the hole. Inside was a modelled representation of a tortoise done in the ancient Aztec style. It was about the size of a small saucer and very heavy. With it was a packet, evidently papers or parchment, wrapped in fabric that had been soaked in either wax or asphaltum.

"Well," said Pablo Suarez briefly, "we seem to have succeeded. Let us go."

It was late that night when we got back to the car. We were very weary. But neither of us had any inclination to camp. We started back toward civilization.

Early the next morning Pablo Suarez parted from me in Julian. He gripped my hand hard as he said farewell. "I go now to Michoacan," he said. "If I find the mine, you also, friend of my father, will be rich. But if I find only death, then write of me this story. It will make for you a good article and I would so wish it. It would be good to tell of the bad luck of this evil little *tortuga* of gold, no?"

He shook my hand and departed.

Six months ago he was slain by Indian bandits in the mountains of Michoacan. So I have told here the story.



Large blossoms like "a swarm of butterflies settled down to rest" adorn the pale greyish plant of *Mohavea confertiflora*, or Ghost Flower. Mary Beal photo.

Ghost Flower Named by Fremont

By MARY BEAL

AMONG the odd and fascinating plants the desert claims for its own is the Mohavea, or Ghost Flower, a unique annual of the Figwort family. It is a pale greyish plant with large blossoms that make you think of a swarm of butterflies settled down to rest. Captain John C. Fremont found it on his expedition of 1843-44 and named it for the Mojave river, along which he collected it, one of his many floral discoveries previously unknown to science. I have collected specimens of it in the area where I am sure Fremont must have found it, but not in profusion. I well remember my delight when I first came upon them in considerable numbers, growing down the long slope of the Kane Springs wash before it debouches from the Newberry mountains into the valley of the Mojave. But a deeper thrill was kindled when I encountered a superlative colony of the Mohaveas in the Bullion mountains, where I was in quest of *Mentzelia involucreata* which had eluded me for 10 years. Along with an amazingly exuberant assemblage of them I found my old friend Mohavea in equal luxuriance.

In its early days it was classed as *Mohavea viscida* by Gray but now its full name is listed in botanical manuals as

Mohavea confertiflora

Commonly from 3 to 8 inches high, with a single stout stem or a few branches from near the base. Under favorable conditions it reaches 12 to 16 inches (rarely 18) with several branches. The pale grey-green herbage is downy with soft glandular hairs. Most of the leaves are very narrow and tapering to a

point, 1 to 4 inches long, with edges curling inward, but on the lower part of the stem often are much broader and shorter.

The delicate blossoms are disposed singly, on very short pedicels, in the leaf axils and in clusters terminating the main stem and branches. The silken corolla is captivating. Its creamy-yellow is speckled with fine purple or reddish dots and dashes frequently arranged in vertical lines. The form of the flower also engages one's interest with its two large fan-shaped lips flaring from the very short tube. The upper lip has a swollen base and is deeply notched into 2 sharply-pointed lobes. The lower lip has 3 shallow, pointed lobes and at the base is inflated inward to form a crested palate, the hairy fold bright yellow, the crest purple. The 2 cells of the thin globose capsule are filled with many tiny black, wing-margined seeds.

You'll find them on gravelly and rocky slopes and washes of the Mojave and Colorado deserts, southwestern Nevada, western Arizona and Lower California.

Mohavea breviflora

A smaller plant than the foregoing species, less than 6 inches high, and sometimes barely 2 inches. The herbage resembles that of its more showy sister and the habit of growth is the same. The leaves are shorter and broader, 1/2 to 2 inches long, broadly lanceolate to narrow ovate. The flowers show even more difference, being only 1/2 to 3/4 inch long, and the 2 lips lightly penciled with only a few inconspicuous purple or red dots and streaks, or none at all. The color is bright sulphur-yellow or lemon-yellow but is less noticeable because the small posy usually is set in the midst of several much longer leaves, which somewhat eclipse it. It flourishes in sandy canyon washes and rocky slopes of the mountains on both sides of the Death Valley sink and also is found in the Inyo mountains, scattered locations in the Mojave desert, northwestern Arizona, and southwestern Nevada, particularly in the Las Vegas-Lake Mead areas.

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PALM SPRINGS, CALIFORNIA

THE DESERT MAGAZINE

The Sierra Club of California has established a pattern for those who love exploration and adventure in the great outdoor world. Here is the story of a two day outing in which members of the organization founded many years ago by John Muir achieved the feat of scaling two of the desert's most rugged mountain peaks during a recent weekend excursion.

We Scaled El Picacho

By RANDALL HENDERSON

Photos by Wm. G. Johnson and the author

WHEN Father Pedro Font looked over the Yuma landscape in 1775, seeking a site for a mission to serve the heathen tribesmen of the Colorado river valley, he saw a conspicuous pinnacle several miles to the northwest and recorded it in his diary. Being a missionary, it was only natural he should observe its resemblance to a mission bell, and he called it *La Campana*.

Eighty-three years later, in 1858, Lieut. Joseph C. Ives steamed up the Colorado in his stern-wheeler, the *Explorer*. Twenty miles above Yuma he rounded a bend and came in full view of this same pinnacle. He called it Chimney Peak, his selection of the name perhaps being suggested by the great stack on the deck beside him belching mesquite wood smoke from the fire beneath the steamer's boiler. He so entered it in his diary.

Not many maps were published in those days. And when gold was discovered near the base of the pinnacle in 1862 the Mexican miners who swarmed into the new camp had no knowledge of the records of Father Font and Lieut. Ives. They simply referred to the monolith as *El Picacho*, The Peak. And that is the name the map-makers of today have adopted.

From a distance you would guess that Picacho is too precipitous to be scaled. Rising 1945 feet from a jumble of lesser peaks like a great volcanic plug—which some geologists say it is and others deny—its sheer thousand foot walls appear to offer no footholds for human ascent.

But Picacho can be climbed, with the help of some rope—and this is the story of



Showing the route followed by the Sierrans to the top of Picacho. The difficult climbing is above the saddle at the top of the couloir.

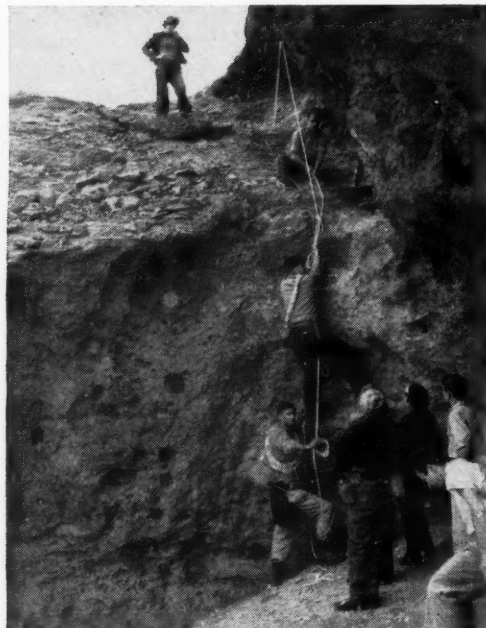
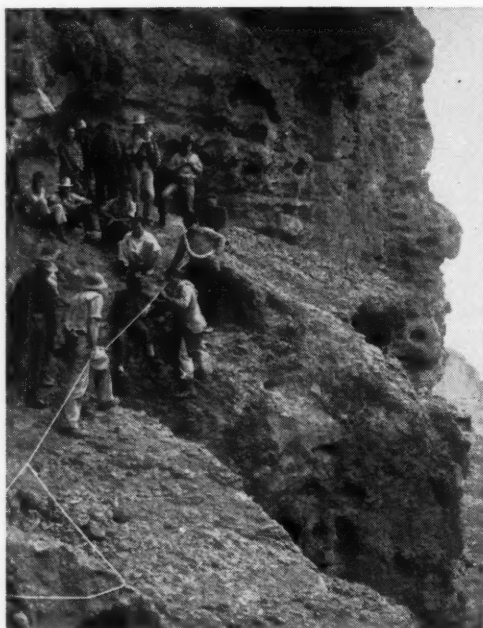
its most recent ascent, by the largest climbing party ever to attempt the feat.

Members of the Desert Peaks section of the Sierra Club of California have scaled most of the summits in the Mojave desert. They decided this season to extend their climbing activities to the Colorado desert—and selected the Thanksgiving weekend in November for a double-barreled assault on Picacho and Castle Dome, which is across the river on the Arizona side. Since I had made three previous ascents of both these desert mountains, they asked me to go along in the role of guide.

Our rendezvous was a little mesa close

by the old Picacho mine, three miles from the base of the peak. The mine has not been active for many years, but the owners believe there is valuable ore yet to be recovered from the old workings, and a watchman remains on duty to protect the shaft and what is left of the equipment.

Forty-two of us gathered around the campfire in a sheltered niche in the hills Friday night, November 28. Most of our party members were from the Los Angeles area. To reach the spot we had left U. S. Highway 80 at the underpass just west of the California inspection station on the western bank of the Colorado. From the



Left—The 10-foot gap, the first climbing obstacle to be overcome on the route up Picacho.

Center—To reach the highest point it is necessary to rope down this pitch and then return hand over hand.

Right—This was the No. 2 roping problem on the way up. Roy Gorin at the bottom of the rope gives the climbers a boost.

paved highway we drove directly north, the first five miles through the cultivated area in Bard valley. Then the dirt road crossed the All-American canal and climbed to a long mesa and eventually to a summit overlooking the highly mineralized Picacho mining district.

At the summit we paused to pay homage to the departed spirit of the mythical Indian princess E-vee-Taw-Ash. I have long suspected that E-vee-Taw-Ash was created by Ed Rochester, mayor of the old ghost town of Picacho and well known among desert rats of Southern California. But it is a good yarn, and since there no longer is mineral wealth to lure visitors to Picacho I think Ed's effort to create romance as a bait for tourists is entirely commendable.

Where the road climbs over the ridge and starts down the grade to the old townsite on the bank of the river, Ed has erected a shrine to E-vee Taw-Ash. A book is there where visitors may register, and a receptacle for the donation of small coins to be used to maintain the shrine. If you would have a safe journey in the land of the legendary Indian princess you must deposit a coin in the box.

And so we signed our names and put our nickles and pennies in the box—for it might be well to have the magic of the departed princess on our side when we tackled the precarious sidewalls of Picacho next day.

As we sang our campfire songs that evening a lone coyote howled back at us from across the gully. It was a delightful night for camping—just cool enough to be snug

inside a sleeping bag. We turned in early, for the three mile hike from the mine to the base of the pinnacle would start early next morning.

Breakfast was over at 6:30 and ten minutes later we started single file up the arroyo that leads south from the mine. The hills on both sides were pecked with the coyote holes of prospectors who have sought wealth in this area for nearly a century. Occasionally we saw rusty steel rails protruding from the sandy floor of the wash—relics of the narrow gauge railroad which once brought ore down the canyon to the mill on the bank of the river seven miles from the mine.

There is no well defined trail to the base of the pinnacle. One simply follows the easiest route over the intervening ridges and arroyos—with the chimney-like massif always directly ahead.

For those who would reach the top there is but one approach—from the southwest side of the thousand foot turret. I explored other possible routes many years ago, and always was turned back by impassable rock faces until I discovered a chute or couloir on the side opposite the mine. This couloir, with a gradient of about 40 per cent, provides a safe route half way up to the summit.

The chute ends in a narrow saddle, and 26 of us reached this point at 8:15 and stopped for a breather before tackling the more difficult climbing above. From this point to the top we zig-zagged up a series of ledges to the summit—but it was not quite as simple as that.

Our first serious obstacle was a 10-foot crevice that cut across a ledge. One can jump across, but the mental hazard is bad, for a slip means a 300-foot fall into the depths below. There were women in our party and we played safe by extending a rope across the gap with loops for hand holds.

At this point in the ascent Roy Gorin and Bill Henderson assumed the leadership in the climb. They are experts in the roping technique of the rock climbing fraternity and we had need for both skill and caution as we advanced up the hazardous route above. The fact that so large a group of hikers with comparatively little knowledge of scaling technique made the ascent without mishap is to the credit of Roy and Bill.

While the rear section of the climbing party was spanning the gap, the rest of us pushed on to where the ledge ended in a 15-foot vertical pitch, the next obstacle to be overcome.

Here one of the party with the help of a shoulder-stand scaled the wall and attached a rope above for direct help to those who were to come. One at a time, with the help of Gorin, members of the party climbed hand over hand up the rope to the ledge above.

From this point it was a steep but easy walk to the summit ridge of the massif. This ridge is about 20 feet wide and 300 feet long, with sheer walls dropping away on all sides except the route of our approach.

We were on top of the pinnacle—22 of



On the summit of Picacho where a cairn contains the names of those who have reached the top.

us—but not yet at the highest point on that narrow ridge. For Nature had placed two more barriers in the way of those who would scale the last 40 feet to the high point where the summit cairn has been erected.

The first of these barriers is a 20-foot pitch where the rope is needed mainly for security, since a fall would end at the base of the pinnacle nearly 1000 feet below. With hard rock for hand and foot holds this pitch would be a comparatively easy ascent. But Picacho is not good climbing rock. Much of it is a conglomerate that breaks away under pressure, and the climber has to test each grip as he proceeds up the wall.

Having reached the top of this knob on the ridge, we were but 20 feet below the cairn—but the last 20 feet is the hardest test of the entire ascent. It is necessary to drop down over an overhang with a rope sling, and then walk up a gentle grade to the cairn which contains the names of the few who have reached the summit. That part is easy. But the return from the cairn requires a 20-foot hand-over-hand climb up that last overhang. Only hardened muscles can make such a climb. The alternative is to assemble enough hands on the rope above to lift the climbers bodily to the top. Since we lacked the time for such a procedure, the final scaling party was limited to 10 members of the group. The names of the 10 who placed their names in the cairn were: Roy Gorin, Bill Henderson, Wm. G. Johnson, A. D. Hamilton, Jack Adams (aged 12), Louis B. Mousley, Bradley and Roger Janetzky, Bill Yinger, and the writer.

Expert rock climbers might scale Pica-

cho, and have done so, with less roping than we did. But the Desert Peaks section is a hiking rather than a scaling organization. They are great mountain hikers, but generally they leave the more hazardous ascents to the Rock Climbing section of the Club, which goes in for more adventurous mountaineering.

The return to the base was over the same route we had followed to the top, and by three o'clock we were off the mountain and packing our camp equipment for the 60-mile drive by way of Yuma bridge to Castle Dome range on the Arizona side of the river.

Castle Dome peak, with an elevation of 3660 feet, is a more conspicuous landmark even than Picacho. Father Font saw it in 1775 and named it *Cabeza del Gigante*, Giant's Head. He reports that the Indians called it *Banquiburi*. Lieut. Ives named it Dome Rock. It is believed the present name was given in 1875 when William P. Miller established a postoffice in the mining camp at the base of the Castle Dome range.

From Yuma to Castle Dome mining camp the road is paved much of the way. The camp, like Picacho, is a mere ghost of the days when the mining boom was on. The mines were discovered in 1863, and were reported to be immensely rich. But most of the ore turned out to be lead, and gold and silver miners turned away in disgust. Six years later it became a profitable lead producing camp. But the best of the lead veins were worked out and the camp lay dormant for many years until World War II when the Holmes brothers, George and Kenneth, reopened them under government subsidy to take out fluorite. Un-

der normal marketing conditions the mines are not profitable and Castle Dome's population today consists mainly of claim owners doing their assessment work and more or less transient prospectors who persist in their efforts to find new pay ledges.

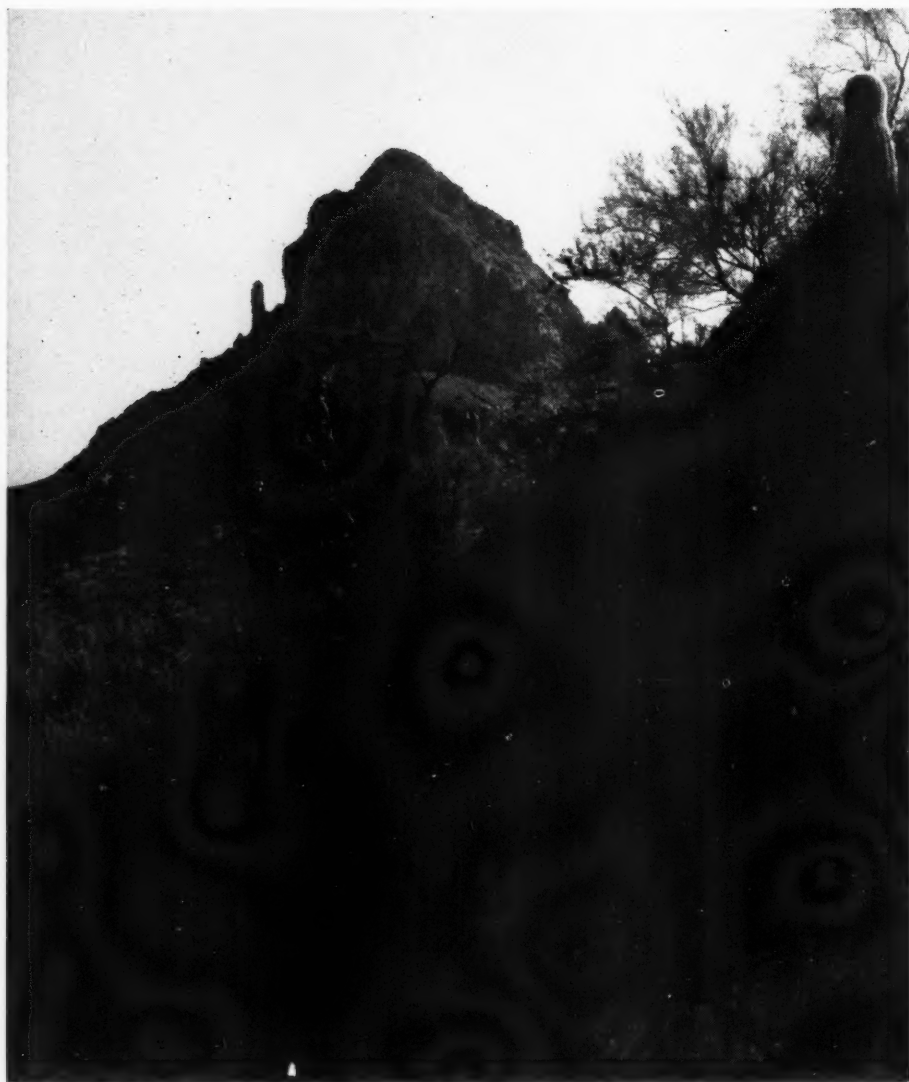
We camped that night five miles north of the old ghost town, along a wadi where dense ironwood and palo verde growth provides a generous supply of firewood. The desert there is clean and vital and undisturbed. This is the land of the saguaro cactus—the giant species that grows so widely over Arizona. We were less than 20 miles from the Colorado river which at this point marks the boundary between Arizona and California. For reasons known only to the gods of Nature, few of these cacti have ever crossed over to the California side. But on the Castle Dome desert plain they grow abundantly. Silhouetted against the western sky at sunset they suggest gendarmes stationed here to guard and preserve the serenity of this remote Arizona desert. They are friendly custodians, and you do not have to be a mountain climber to enjoy this spot.

As ironwood trees attain old age they discard some of their branches to make way for new growth. Thus, in a desert where the arroyos are lined with ironwood the problem of firewood is easily solved.

That evening around the campfire there was singing and impromptu entertainment. But the party broke up early for the

Mary Liggett stops to sign the register and pay her tribute to the legendary princess, E-vee-Taw-Ash.





Castle Dome, showing the gendarme which marks the route of ascent.

9-mile round trip hike to the summit of the Dome the next day called for a good night's rest—and we wanted to start before sun-up and return to base camp by noon if possible.

Castle Dome does not offer serious climbing difficulties from the north side, and we carried no ropes when we left camp at five in the morning.

The most accessible route is up Ladder Tanks canyon near where we were camped. A half mile back in the range the canyon splits into three tributaries. The natural tanks which gave the canyon its name are in the south branch. In years past there was a fine water supply here, in a series of rock cavities one above the other. But today, due partly to deterioration of the rock and partly to the prolonged drouth in western Arizona, they are dry.

The north branch of the canyon leads directly to the base of the Dome. It is easy hiking along the floor of the canyon for 2½ miles, and then a steep but not hazardous ascent to the summit.

Ladder Tanks canyon brought us to the north base of the massif. Half way up the

steep slope to the top a great splinter of rock stands like a granite statue and our route was around the base of this pinnacle to a ladder-like pitch directly behind it.

When I first climbed Castle Dome in 1931 the tobacco can in the cairn at the summit contained 34 cents in nickles and pennies, and a note inviting all climbers to add to the fund. There was no suggestion as to the purpose of the contribution. Perhaps that was another tribute for E-vee Taw-Ash. No doubt Ed Rochester could clear up the mystery.

The original can and its money have long since disappeared. But the Sierrans rather liked the idea, and they started a new bank account for the Indian princess.

Two desert peaks in two days is rather strenuous for folks who spend their work days in offices and class rooms—but the Sierrans are sturdy mountaineers, and we were all back at base camp by one o'clock. The pennies we put in the can really were a very insignificant tribute to pay for the security and pleasure we enjoyed during two days of glorious adventure in the domain of E-vee Taw-Ash.

NAVAJO TO BE ALLOWED INCREASE IN LIVESTOCK

Interior Secretary J. A. Krug has directed the Indian office to prepare immediately new regulations which will permit the Navajo to increase their livestock to the carrying capacity of the range and to submit the plans to the Navajo tribal council for approval. The instructions are the result of a land utilization study made on the reservation last summer by Lee Muck, Krug's special assistant, who reported that the range was not being used to full capacity and that there was room for expansion by 70,000 sheep units.

The report showed that a total of 565,652 sheep units were permitted and that 125,829 units less than that actually were being grazed. However the total permitted units actually exceeded the rated carrying capacity of the range by 52,730 units, the excess being carried on special permits. The sheep unit is based on the amount of forage a sheep requires. A horse is rated as five sheep units, a cow four sheep units. Livestock owners are permitted to keep spring lambs on the range to December 1 and cattle for one year before they are counted against permitted units.

There are 7491 permits in effect on the reservation, approximately one to every eight Navajo, based on 60,000 population. The number of sheep units allowed on each permit varies from 280 in districts three and five to 61 in district 14. It was said that flocks smaller than 250 sheep can not be operated on an economic basis. Tribal attorney, Norman Littell, declares that the Navajo with the smaller flocks have been forced to eat their livestock capital in order to stay alive, and so have not been able to bring their flocks to permitted size.

The Muck report charged that the Indian bureau used arbitrary methods and made no efforts to win Indian cooperation with the result that the grazing lands have been poorly managed and unnecessary stock restrictions imposed. Tribal Chairman Sam Akeah told a congressional committee that the Indians had not been informed of the programs planned and being carried out for range improvement, soil and water conservation, and said that if the Indians were kept fully informed, they would cooperate.

Akeah pointed out that the Navajo could not be expected to inform themselves of the programs being carried out for their benefit, nor could they be expected to manage their livestock for maximum income and range conservation without first being educated and properly instructed in livestock management.

Krug told the Indian bureau that the new regulations must be submitted to the Navajo tribal council before he will approve them.

LETTERS...

It's Fun to Be an Editor . . .

Lancaster, Missouri

My Dear Editor:

In the last Desert, on the Letters page, someone complains about snakes. Quits the magazine because there is an occasional snake picture in it. Now the editor really is on the spot. For I shall quit unless there are more snakes. I want the biggest and most threatening snake picture you can find—and put it on the front cover. You'll find a good one in Ditmar's *Snakes of the World*, Plate 84. So come on now, and give us Missourians some snakes.

And thanks for everything in Desert.

LYLE L. GAITHER

• • •

Thanks to the Rockhounds . . .

Veterans Hospital
Livermore, California

Dear Sir:

This is in sincere appreciation for space you gave in Desert for my letter "Rock Needed," for this hospital, and thanks to all the generous Desert readers for their overwhelming response. I have often wondered what became of the rock the time the Scotchman excavated the Grand Canyon (you know, the time he lost the ten cent piece down the gopher hole). I know, now, where part of it is—it was sent to us by a grand bunch of "rockhounds" who have collected it from all the Western states from Oregon to Texas.

It reminds me of a time I ventured out on the base of a talus slide (in the Sierras) to get, and look at, a piece of float rock I could see about halfway across. I ventured out, picked it up, and from results, it must have been the keystone holding that whole mountain side in place. I sure started something then, too. This "rock slide" is quite a bit more pleasant—and not so dangerous—I hope.

For those readers who may be interested, the following may give some idea as to whom, and where, your rock got to, and how it will be used. This hospital is located on a part of what was the early Jess Livermore ranch, a Spanish grant, some five miles south of the present town of Livermore, on a north and east slope, and has a sunny, mild climate, away from fog for the most part, and below the snow line.

Here is a doctor's statement on occupational therapy: "There is among other services here a physical rehabilitation service for patients to do vocational work in a number of completely equipped shops, such as photo laboratory and machine shop including some tools for lapidary work (writer's note) and some tools to procure for a complete workable shop." (But, we'll get them.) "This is done so that upon discharge from the hospital, patients can, with

further training, engage in types of work which are within the limitation of their disability. Patients are also able to build up their 'work capacities' beginning with one hour per day and working up to four hours per day before discharge. They may also complete work for high school diplomas and have a choice of about 200 courses of study, as well as a great number of University of California correspondence courses."

The list of contributions and contributors would be too long to go in this letter. I will write each of you, as individuals, and answer your letters, to the best of my ability. But, please, hold up the rock for now. We have an abundance of most of the gem stones and some minerals from the Western states (thanks to you) and more will come.

May your pack sack never come in empty, and may you find a second Comstock, Mother Lode, or a solid jade mountain on your "next field trip."

CLAUDE E. NAPIER

• • •

Anyway, it is a Pretty Canyon . . .

Palm Springs, California

Dear Randall:

You must study up on your Spanish. S. G. Morley is right and you are wrong. *Cañon del Muerto* means Canyon of the Dead Man.

El Muerto, the dead man.

Del Muerto, of the dead man.

Un Muerto, a dead man.

Canyon of the Dead would read *Cañon de los Muertos*.

R. P. FRANCK

I am beginning to understand why I got such a bad grade in Spanish in my school days. Thanks R.P.—R.H.

• • •

Try Highway 80 . . .

Santa Barbara, California
Hope Ranch

Dear Randall:

Well, well, so if I go east on Highway 50 I'll come to Yuma?

I always take (without peeking) your fascinating Desert Quiz, and as I have spent a lot of time in the desert area and traveled over most of it, it is a source of satisfaction to my ego to be able to get about 18 out of the 20 questions month after month. In your March, 1948, issue, I was sure I had them all. Then I looked at the answers. Well—the day may come when I'll drive east on Highway 50 and come to Yuma, but when I do it'll be on some other planet.

Recently I had occasion to drive east from San Francisco on Highway 50, and I do recall Sacramento, and Placerville, but I must have passed through Yuma without noticing it!

The only restitution Desert can make is to publish 19 questions in the next quiz which will be of the usual type, and to give to us who swear by it, one free question. For this I suggest: "What is the best regional publication in California?" The answer to that is the Desert Magazine. We'll all get that one right to start with. But what have you got against Yuma to put it way up on Highway 50? I like Yuma right where she is.

EDWIN CORLE

Dear Edwin: We've apologized to the Yuma chamber of commerce, answered 57 letters from indignant Quiz fans, and sentenced the proof-reader to three days in the doghouse. And congratulations to you on a perfect Quiz score.

—R.H.

About Those Mesquites . . .

Phoenix, Arizona

Dear Editor:

It looks as if these Old-Timers had you up a tree, and a mesquite tree is one of the worst I know of, to be up, on account of the thorns.

I was afraid you might not get down in time to put out the next number of Desert Magazine, so I am coming to your aid, to help you down.

Your statement that mesquites grow only where their roots reach underground water, may have taken in a little too much territory, but in the main it is absolutely true. At least, 'tis so in Arizona.

The Old-Timers are also right in saying that mesquites sometimes grow where it is a long distance to water, including straight down. In that case, however, they are located along washes or in swales or low places where the scanty rainfall collects and gives them an added amount of moisture. They never grow at random over the mesas and ridges and on top of the hills as do other desert trees and shrubs such as the palo verde and creosote bush. In places where there is underground water or seepage, their roots will go 40 and 50 feet down to reach it.

When I came to Arizona, 52 years ago, there were large forests of mesquite, some of them 50 feet high and with trunks five and six feet in diameter. The large trees grew always along the streams and river bottoms. As they reached back to higher ground, they became smaller, clinging to the washes and swales, and almost entirely disappeared at the level of the foothills. Agriculture, and the demand for wood, has almost obliterated the mesquite growth in Arizona, but what remains, still clings to the original habitat, making a heavy second growth in favored places. The present drouth, with the accompanying lowering of the underground water level, has retarded the re-growth of the mesquite thickets, and has in many places killed them.

The mesquite is not strictly a desert tree, and cannot adapt itself to desert conditions

as many other trees and shrubs do. The palo verde, when drouth strikes, rolls its leaves into tiny balls, to prevent evaporation, and stands dormant until rain falls again. The ocotillo, after the spring rains, sheds its leaves, and stands with dead stalks until summer rains come, when it sends out new leaves and blooms gorgeously. The mesquite cannot do this. Extreme lack of moisture means the death of the tree without fail.

In my opinion, your statement that the mesquite sends its roots down to underground water is true in 75 per cent of cases, and in the remaining cases, they receive extra moisture from some conservation of the intermittent rainfall.

W. I. LIVELY

Thoughts of a Navajo . . .

Pueblo, Colorado

Dear Mr. Henderson:

Relative to comments of yourself and Mr. Ed. F. Williams concerning the Navajo situation:

In discussing these matters recently with a young Navajo war veteran, he had the following to say: As to the Colorado river reservation idea: "No good for my people; too hot, summers like hell; no good for sheep or cows; no water on land—all in

river. No good for anybody but white men with lots of money to make plenty irrigation—raise cotton maybe."

His alternative plan: "Make open to us forests near our reservation—give us big forest country north of big canyon (Grand Canyon North Rim country) before white men kill all deer, cut down trees and maybe burn all up. We could live there like our Apache brothers in White mountains—raise plenty cows and sheep—not need white men's help any more."

Concerning the situation in general: "Why do white men always say for us something they do not like for themselves? We do this; we do that; we go here; we go there; we go away somewhere else like poor people in big war—let white man have everything he wants and we take what he no wants, always like that it is for us. We have many talks with big men in Washington; always they say more schools and teachers, many good things for us and our land, but we still wait. Why say so much and do so little for us? Make us citizens; give us square deal same as white men and then we will make out all right and take care of ourselves good."

The foregoing statements, earnestly given, should contain sufficient food for serious thought.

W. G. HEISLER

Wildflower Forecast for April . . .

Extent of 1948's wildflower parade still rests in the hands of the rain gods, but chances for mass displays this year are growing more remote. That does not mean that there will be no blooms for those who come to the desert in April. Individualists, undaunted by drouth and cold, already are flowering along washes and roads and in areas where a little moisture has been available. Most hopeful reports come from southern Nevada, where rain has fallen, Organ Pipe Cactus national monument in Arizona, and Daggett, California.

Verbenas are said to be blooming along the road north of Indio, California, and there are a few dune primroses between El Centro and the sand hills. In the washes of the Chocolate mountains above and below Beals well, and in Paradise valley, encelia promises a good showing.

The Julian area is having damp weather, slight snow fall and fogs. If the dampness continues wildflower chances will be increased, according to Myrtle Botts. In the Borrego area, she found ocotillo in bloom at the north end of the valley, and a few desert lilies, verbena, primrose, chicory and creosote bush. At Twentynine Palms there will be no annuals blooming this spring, Sara M. Schenck reports. Encelias, yuccas and Joshua trees started blooming there early in March, but not profusely. The general outlook: desert blooms small and far between.

Mary Beal notes the possibility of a fair crop of wildflowers in the Daggett area, if more rain comes soon to continue the growth already started, but the season will be late. The dandelion field east of Daggett is fairly well carpeted with young plants a few inches high and on the slope to Ord mountain a varied array of young plants have made a good start. Among them she recognized Yellow Woolly Breeches, Fremont and fiddleneck phacelias, mentzelias, Mojave poppies, chaenactis, fairy mist, evening snow, lilac sunbonnets, desert stars, coreopsis and sun-cups. The lycium bushes—rabbit-thorn and water jacket—are beginning to bloom, she says, and they usually herald the coming of the flower parade. The north side of the valley shows less promise, but there are patches of green in the canyons of the Calico mountains about boulders and shrubs and at the base of cliffs, wherever moisture might settle.

But drouth was still the word in the Lancaster valley where Jane S. Pinheiro anxiously watched low-hanging clouds and hoped for a two-inch rain fall which would bring lots of flowers, since the ground temperature is up. But the outlook is not optimistic. So far, some poppies, lupine and chaenactis are showing. The Joshua trees are sending out a few buds which seem to be maturing more rapidly than usual. The winter has been unpredictable—balmy and

warm for a week and very cold the next, with some terrific winds and sandstorms.

In the Lava mountains, near Randsburg, and Eagle Crag, filaree, lupine, larkspur and owls clover are coming up abundantly and promise a good showing.

Plants which usually make the best flower show in the Death Valley national monument with peak blooming time in March and April are: Desert gold, evening primrose, phacelia, desert five spot, Mojave aster, monkeyflower, desert star, gravel ghost and nama. Those with maximum bloom in April according to Park Naturalist Floyd Keller, are gilia, encelia, creosote bush, beavertail cactus, mentzelia and gold poppy. The prospects for a display do not appear encouraging, but the final result will depend upon precipitation through March.

The only really encouraging report from Arizona comes from Organ Pipe Cactus national monument where William R. Supernaugh, custodian, states that poppies were starting to bloom late in February with some mass displays. The ajo, a desert lily, was coming along abundantly and should be flowering in March. Other desert flowers of the area should reach their peak in April.

Some moisture fell in Tumacacori national monument late in February and with rainfall almost normal for that month there will be some flowers, Custodian Earl Jackson believes, but no spectacular displays unless the hills get rain during March. Normally, ocotillo, cream cactus and hedgehog cactus are blooming in April with verbenas and poppies at their height.

The winter, to late February, has been exceptionally dry in Saguaro national monument. There was no sign of cacti blooms, paper daisy, encelia and mallow, usually starting to bloom at this time, and the ocotillo were not leafing out. Custodian D. W. Egermayer found a few Parry's penstemon flowering, but did not expect much of interest this year.

Southern Nevada received badly needed rain, Dora Tucker of Las Vegas reports, and the desert is putting on its Easter gown of beautiful hues, with large patches of magenta colored verbenas dotted with white sand primrose. Here and there are bright yellows of encelia, the soft maroon of sandmat and wild buckwheat. She found lupine and phacelia and many others, some in bloom and some just showing their bright greens and greys.

In Lake Mead recreational area, wildflowers were blooming at lower altitudes along the Colorado river on February 27, Maurice Sullivan, park naturalist, found. They included lupines, encelia, evening primrose, red-stem filaree, desert mallow. As the season advances, the flowers will be found at higher and higher elevations. A good rain early in February started spring growth and another rain would insure a fine floral display this year.

Mines and Mining . .

Big Pine, California . . .

Eureka Valley Sulphur mines, near Big Pine, will resume operation in the near future, it is reported, with R. E. Ketching in charge. The product will be marketed by Dan Nord and Art Ronchhausen. County road equipment has started work on the road between the sulfur mines and Oasis. Another projected road would run from Big Pine through Eureka valley to Zurich, past the talc and sulphur mines to Sand canyon and into Death Valley via Scotty's Castle.

Randsburg, California . . .

Production Research, Inc., of Pasadena has leased the Grey Eagle perlite claims of Gerbracht and Muer, located in Last Chance canyon, 15 miles west of Randsburg. The property is located between the Cudahy Old Dutch Cleanser mine and the Calsilco Holly Cleanser claims. The present work is planned to give access to the property, strip the deposit, and make core drilling tests to determine quantity and quality of the perlite. Preliminary analysis and reports from the state division of mines and private laboratories have indicated extensive deposits and high quality.

Fallon, Nevada . . .

The Summit King gold-silver mine, 30 miles east of Fallon, was expected back in operation during February, according to P. G. Dodson, manager. The mine, which closed three years ago due to war conditions, is expected to employ 20 men. Since operating costs were said to be 60 per cent higher than when the mine was closed, little development work was planned. Ore will be taken from the third, fourth and fifth levels with two years' run blocked out. Raymond L. Clawson is mill superintendent, Frank Kennicot in charge of the mine, and Ira B. Joralemon, consulting engineer.

Shoshone, California . . .

The 100-ton mill built by New Sutherland Divide Mining company on the Queen of Sheba property in the Panamint range, 42 miles directly west of Shoshone, is completed and a number of test runs have been made. An expert from American Cynamid company will observe further test runs and select proper reagents for the flotation process. The mine is located at 1200 feet elevation, 9 miles from Badwater. Drinking water is hauled from Shoshone, water for other purposes pumped three miles. The property, in charge of John L. Desmond, is reported to have a big tonnage of good ore, mostly galena, exposed.

Oatman, Arizona . . .

Gold values averaging half an ounce per ton along a 140-foot ore shoot have been reported in the White Chief shaft of Triumph Gold Mines, Inc., at Oatman. Stopping widths have been opened to eight feet, according to Gilbert Phillips, general manager, with values from \$35 to \$80 per ton in assay and engineers reports. In the Oatman gold mining revival, 18 men are preparing the Victoria mine, five miles south of town for large scale production. Values at the Victoria shaft, according to J. H. McCarthy, general manager, range from \$7 to \$35 per ton. A 300-ton mill from the Producers' mine near Chloride will be installed at the Victoria and will also mill ore from the company's Bullrush claim where \$3.50 to \$10 ore will be mined by open pit methods.

Monticello, Utah . . .

The Atomic Energy commission has revealed plans to operate the recently purchased vanadium plant at Monticello, Utah, and announced that it was working out a program of buying uranium ore from private sources and to limit direct government production of the ore. The *Grand Junction Daily Sentinel*, Colorado, declared that, since evidence has been substantiated that Colorado and eastern Utah provide the only large sources of uranium ore in the United States, the area was due for vast expansion. It reported bids for remodeling of a warehouse building at the uranium mill near Gunnison river, for use as offices of the U. S. geological survey and a small chemical laboratory.

Goldfield, Nevada . . .

Newmont Mining corporation has announced officially, the first mill unit of 100 tons daily capacity for their Goldfield Deep Mines operation will be installed some time this year with construction to begin in March. Elmer Burt, superintendent of the Deep Mines operation reportedly has been instructed to install pumps in the Laguna property to determine for mill purposes the flow of water in the old workings. The mill will be located on the site of the Florence mill which burned and was dismantled years ago. No official information regarding underground operations was issued, but reports told of another rich ledge which was cut by a cross-cut from the old Whitehorse group and which may prove larger than the original strike.

Fallon, Nevada . . .

Operations reportedly have been stepped up at the Nevada Scheelite mine, 40 miles southeast of Fallon, with the crew

increased to 27 men. Lee Albertson and Harry Manning have taken a contract for mining work and are running two shifts a day. Otto Rolphs, mining engineer, recently has joined the staff.

Goldfield, Arizona . . .

Renewed attempts to operate the Black Queen and Mamouth properties on the northwestern flank of Arizona's rugged Superstition mountains this winter may bring life to the ghost camp of Goldfield. Alfred Strong Lewis, formerly with the state mineral resources branch, will supervise operations. Mining activities in the area started in 1891 and by 1894 the mine was producing 100 tons a day and Goldfield had a reported 5000 inhabitants. The town was swept away by a flood in that year, and attempts to resume operation since that time have been unsuccessful. The 1067-foot Mamouth shaft and its two miles of underground workings are now filled with millions of gallons of seepage water.

Randsburg, California . . .

Kern Placers, Inc., have sub-leased their equipment and the Hammon placer properties just north of Randsburg to Foley Brothers, Inc., of St. Paul, Minnesota. Harry Dorvinen, Foley superintendent, is employing crews for what is expected to be a two-shift operation requiring around 20 men. Dorvinen declares that competent engineers will be hired to handle the gold-tungsten recovery processes and full operation is expected within 30 days.

Mining regained its old position as Arizona's number one industry in 1947. Production valued at \$200,000,000 pushed it ahead of agriculture, the leader for several years. Price increases were a greater factor in the showing than gain in production volume, but copper was up 26 per cent in volume, zinc 21 per cent, silver 32 per cent and gold had increased nearly 14,000 ounces.

"Uncle" Tom Duke, pioneer of the Rand, California, district and first mine foreman of the Yellow Aster mine, died at Phoenix, Arizona, January 19, aged 85. He was with the Yellow Aster from 1895 to 1905, when he left for the Tonopah-Goldfield area. He returned to Randsburg in 1912 and lived in the area until 1919.

Nevada state bureau of mines has issued a 90-page bulletin, *Mineral Resources of Douglas, Ormsby and Washoe Counties*. The bulletin, No. 46, was prepared by Thomas D. Overton and deals with the topography, geology, ore deposits, history, highways and production of each county. There are 14 illustrations in the text and maps of the area. The bulletin is free to any citizen of Nevada.



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HERE AND THERE... on the Desert

ARIZONA

Seek New Colorado Dam Site . . .

YUMA—Plans for a new dam across the Colorado river, north of the Mexican border, were discussed at joint sessions of the United States and Mexican sections of the International Boundary and Water commission, held at Yuma in February. Under terms of an international water treaty, Mexico has the right and authority to construct the dam, it was said, and is allotted 1,500,000 acre-feet of water a year.

Rurales Ride an Old Trail . . .

NOGALES—Horsemen once again traveled the old Tucson-Nogales wagon trail when 22 members of the Santa Cruz County Rurales covered the 70 miles in three days, riding from Nogales to Tucson for the Fiesta de los Vaqueros. The Rurales, with a membership of professional men, cattle ranchers, business men and housewives found the going rough, but they did not face the Apache warriors who caused pioneer Pete Kitchen to christen the road: "Tucson-Tubac-Tumacacori to hell." The cavalcade was led by Bird Yoas, grizzled veteran of early days on the trail.

Cabeza Prieta Tanks Improved . . .

YUMA—Actual development of water sources for wildlife on the Cabeza Prieta game range was started in February with John Kempton in charge. Arthur F. Halloran, game range manager, explained that natural rock water holes or rain filled tanks become low or dry in the summer. Work of the service has consisted in making the watering places deeper with more shade and in blasting the slippery rock sides of certain tanks which have become death traps for wild sheep attempting to water at them.

Billy Fourr Dies . . .

DOUGLAS—Billy Fourr, 77, pioneer Arizona cattleman, lawman and miner died in Douglas, January 31. Fourr's parents settled in the Dragoon mountains in the late 70s, establishing the famous 4-F ranch. Most of Billy's education was gained in the Tombstone schools. While active as a cowboy, Fourr was a friend of Pancho Villa, famous Mexican revolutionist and nursed Villa to health after a siege of pneumonia.

Respirator for Fish . . .

SPRINGVILLE—Arizona game and fish commission is using a "respirator" to save the lives of fish in Big lake in Apache county. Dick Slade and Bill Burke, who will camp at the lake until spring, haul the device, a portable compressor, out on the ice on a sled and pump air through holes in the ice. They also have rigged up rafts

equipped with sails in open spaces chopped in the ice and hope the wind will keep the rafts moving and prevent the water from freezing. The fish have died from lack of oxygen in the past when the lake was frozen over for months.

Expand Navajo Medical Work . . .

CHINLE—The 15-bed hospital at Chinle has been changed into a health clinic, according to Dr. Harold M. Knudtson, chief medical director of the Navajo reservation. Beds were moved to Fort Defiance where patients requiring bed care will be taken. The move, Dr. Knudtson said, is the first in a plan to extend field medical work among the Indians.

Frank C. Spencer and his wife, in charge of the museum and curio shops at Hopi House, Grand Canyon, for more than 30 years, are retiring. Spencer has been with the Fred Harvey company for 46 years.

Mrs. Carlotta Connelly who teaches at Mishungnovi with her husband John, has written her own primer for the Hopi youngsters, illustrating it with pictures of Hopi life. She is working on books for older Indian children.

Aaron Anmahian, tourist from Massachusetts, saw a wild mountain sheep on the highway near Mohawk. He stopped the car for a better look and the sheep leaped over the car's top, breaking the windshield and damaging the body.

Arthur F. Halloran, manager of the Kofa game range, has collected three badgers in the Castle Dome range, Yuma county. The find extended the known range of this species, *Taxidea taxus sonoriensis*, 325 miles northwest from its previously recorded type locality near Hermosillo, Sonora.

CALIFORNIA

They Made Their Highway . . .

RIDGECREST—Three "desert-happy" adherents of the proposed Cross-country highway proved in January that it is possible right now to take off due east from Ridgecrest and drive to Las Vegas—if you have the right car. The trio, Harold Fuller, Elliott Fox and Bruce Manley, left Ridgecrest in a surplus weapons carrier, crossed the south end of Searles Lake and picked up the mountain trail that leads into the winding canyons of Leighton pass. From the summit they went down through Panamint valley, over Wingate pass, through Death Valley to Death Valley Junction, following the proposed route of the new highway.

THE DESERT MAGAZINE

Smoke Trees Are Protected . . .

PALM SPRINGS—Following reports of wholesale destruction of smoke trees in the desert areas, Lloyd Mason Smith, director of the Desert Museum warned that the picking of desert shrubs carried a strong penalty. Smith quoted the state penal code: "it is unlawful to cut, mutilate, remove or destroy any native tree, shrub, fern, herb, bulb, cactus, wildflower, huckleberry or redwood greens growing along public highways or to collect for commercial purposes any plants from public lands, or from private lands without the consent of the owner." Further on the code specifies: "Yuccas, the snow plant, the desert holly, the smoke tree and cacti must never be molested." The smoke trees reportedly were being hauled away for use in Los Angeles florist shops.

Navy Closes Desert Area . . .

In the greatest closure of desert land since World War II, the navy has ordered all non-authorized personnel to stay clear of "Mojave Range B, Naval Ordnance Test Station, Inyokern," an area of 864 square miles which extends from the southern end of Panamint valley to the outskirts of Barstow. The range, being used for high level and ground ordnance tests, is 24 miles east to west and 36 miles north to south, with boundaries given as from

Ranges 44 East to 47 East and Townships 25 South to 30 South. The navy release did not state whether the closure was permanent. Rock collectors and prospectors, questioning need for the vast addition to the present 1100 square miles of the NOTS reserve, which is as large as the state of Rhode Island, are said to be planning congressional protest. Included in the range and township boundaries listed are Lead Pipe springs, Eagle Crag, Brown mountain, Copper City and Pilot Knob. The area has been posted.

Fight for the Burros . . .

TRONA—Residents of Searles valley have banded together to fight for legislation to halt the wanton slaughter of desert burros. Action was taken after bodies of four of the little animals were found in Homewood canyon on January 17, where they apparently had been shot without reason and left to die. Present laws protecting the burro are effective only if the killers are caught in the act of transporting a carcass for food purposes and were designed to stop wholesale killing of the harmless animals for dog food. Inyo county authorities have joined the Searles valley fight, and the burro may be legally classified as a game animal and protected by game laws. In the meantime state rangers are patrolling the area.

Famed Entomologist Passes . . .

PALM SPRINGS—Professor T. D. A. Cockerell, internationally known in the field of biology and especially entomology, died in San Diego, aged 81. Professor Cockerell and his wife, Wilamette, came to Palm Springs in 1943 and maintained the museum there during the war years. The Cockerells served without pay and expanded the facilities of the museum, inaugurating the motion picture and lecture programs which now are an important part of museum activities. Professor Cockerell is the author of a study: *The Colorado Desert of California: Its Origin and Biota*, published by the Kansas Academy of Science. He was professor of zoology at the University of Colorado for 28 years.

Park for the Salton Sea? . . .

MECCA—Riverside county board of supervisors unanimously has passed a resolution requesting the State of California to declare a portion of the Salton Sea area a state park. The proposed 320 acre park will lie southeast of Mecca and will include a mile of sand beach. Lyle Howell, sports director of the Coachella Valley Sports league, declared that no drainage problem would be faced in the new park since drainage ditches are on adjoining private property.



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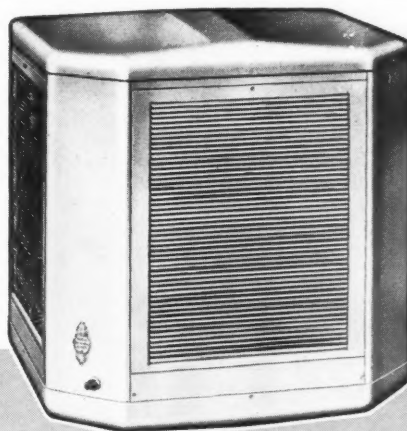
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THE DESERT MAGAZINE

Carrizo Visitors Warned . . .

EL CENTRO—Commander W. I. Darnell of the El Centro navy air base warned all would-be visitors to the Carrizo valley region north and west of Plaster City that there are unexploded bombs in the area. Careful check has revealed that as the result of current bombing operations there are six unexploded high explosive missiles now on the ground ranging from 100 to 1000 pounds. They have been located and marked by navy ground crews but will not be exploded by demolition experts until current operations are completed in March, and visitors were warned to stay clear of the entire area.

Charles Davis, sports and fishing commentator and writer, told Blythe residents that the best bass fishing in the United States was in the Colorado river near their town.

Lucille Coke, manager of Calico Ghost Town museum, reports an increasing interest in the possibility of making Calico a public park. According to Mrs. Coke, 1000 cars were checked in at the ghost town the last Sunday in January, and 960 the first Sunday in February.

A string of eight wells which will carry brine from the lower deposits of Searles Lake to the new Soda Ash Borax plant has virtually been completed. Wells have been sunk to an average depth of 135 feet.

NEVADA

Virginia City Water Famine . . .

VIRGINIA CITY—Water in flumes which serve Virginia City from Lake Mariette area above Lake Tahoe, 30 miles to the south, froze solid on January 26 and for more than three weeks the old mining camp suffered a water shortage. The 1000 inhabitants were supplied with rationed water hauled into the city by the state highway department and a construction com-

pany. Two small fires were extinguished by chemical trucks, but it was feared that if a large one broke out there would be no way of stopping it, and Reno city officials pledged that equipment would be sent in such a case. Workmen removing ice from the flumes neared the Comstock on Febru-

ary 17, and resumption of service was expected then.

A state highway crew is engaged in surveying a proposed new route for the Austin-Battle Mountain highway, which will include Copper Canyon.



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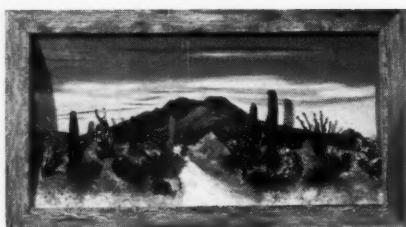
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Miners in Arms . . .

GOODSPRINGS — Armed Goodsprings miners are awaiting the return of junk collectors with an Arizona license plate who have stolen many tons of mining machinery during the past month. E. E. Kinney reported that dynamite had been used to blow up and wreck his hoist so that the metal could be salvaged. Deputy Sheriff A. H. Kennedy is making a canvass of junk dealers in the surrounding county in the hope of picking up clues. The miners, patrolling their claims, warn that they plan to shoot first and ask questions afterward.

Fight Coyote Poisoning . . .

AUSTIN—Molly Flagg Magee, writing in the *Reese River Reveille*, has attacked the wholesale slaughter of coyotes by poison in Nevada, charging the poison is fatal to all meat eating animals, including badgers, golden eagles, mountain lions and many range dogs. Even household pets, she declares, have fallen victim to the wide-spread poisoning program of the federal predator and rodent control. She says destruction caused by coyotes, except in the killing of young lambs, has been exaggerated and they actually do useful work as scavengers and in their staple diet of rabbits, gophers and field mice. Wildlife officials say the baits are placed carefully and taken up in the spring and as the result of the program one northern Nevada sheepman who lost 500 lambs last year lost none this year.

Promise Castle Road Maintenance

BEATTY — Indications are growing that unimproved sections of the Death Valley Castle road, lying between Highway 5 and the California line, will be graded regularly. County commissioners of Nye and Esmeralda have assured the Castle manager, Henry Ringe, full cooperation and the two counties will work together in the project. Ringe declared he has hesitated to send many tourists who planned to visit Nevada along the bumpy 26-mile stretch. The Castle, according to Ringe, is

to be operated in exactly the same manner it was before A. M. Johnson's death.

"Psychological Kid" Arrives . . .

GOLDFIELD — William Saunders, known for 40 years in Western mining circles as the "Psychological Kid" has arrived in Goldfield with the boom resulting from reported rich strikes in the Newmont mining operations. Saunders says the psychological moment for starting his own operation hasn't arrived, but that "the old town's getting ready to roar down the comeback trail." Saunders explained his name to local prospectors: "Boys, the psychological moment is getting into a camp just when a boom is starting and getting out just when it ends. I've been doing that for years." Goldfield has invited the Kid to stay a while.

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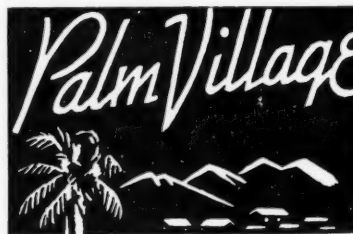
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DESERT QUIZ ANSWERS

Questions are on page 14

- 1—Dig a pit and bury it.
- 2—Palm.
- 3—Bennett-Arcane party.
- 4—Navajo.
- 5—Aid the conquest of California.
- 6—Polaris.
- 7—A species of wild hog.
- 8—North.
- 9—Nevada.
- 10—Indian ruins.
- 11—Silver at Tombstone.
- 12—Quartz.
- 13—Bolton.
- 14—Salt Lake City.
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- 16—Santa Fe, New Mexico.
- 17—Joshua tree.
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AUSTIN—Mrs. Elizabeth Jones Acree, Austin pioneer, died in Reno in January just before her 89th birthday. Mrs. Acree came to Austin in 1877 from Texas and brought with her a bush of the yellow rose of Texas. From this bush, according to the *Reese River Reveille*, came all the yellow roses which make Austin a beauty spot in the summer, and it was the parent stock for yellow roses found throughout much of Nevada and California.

NEW MEXICO

GALLUP—James M. Stewart, general superintendent of the Navajo agency, announced the \$500,000 congressional appropriation for Navajo-Hopi winter relief would make further aid from other sources unnecessary this winter. Red Cross and tribal funds were not to be used after February 1, and relief contributions from private sources, still coming in, were no longer needed. The Navajo people and the Indian bureau were grateful to the people of the country for their generous help, he said.

SANTA FE—Assistant Attorney General Robert Ward believes two Zuñi Indians decided to withhold their state supreme court appeal in a suit to test their right to vote in state elections because "they don't want the vote." The Indians are afraid if they are enfranchised the state will tax their land and assume jurisdiction, he asserted. The Indians' attorney, William J. Truswell said it was possible pressure had been brought to bear upon the plaintiffs, William L. Lewis and John Simplicio, by their own Zuñi pueblo officers. Representative A. M. Fernandez has suggested a plebiscite of the pueblos be held to determine actual Indian opinion on the matter.

LAS CRUCES—Max Mandelko, reporter for the *Las Cruces Sun-News* declares the local Odd Fellows cemetery where

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Sheriff Pat Garrett who killed Billy the Kid is buried, is littered with bottles, weeds and trash. "If Garrett were to resume earthly form," he said, "he'd be pointing his six-shooters at the indifferent persons who have permitted a shrine to be transformed into something worse than a pigpen." The cemetery was established as a burial place for Civil war veterans and other early day residents and was maintained for many years before dropping into neglect. Rotary club members have taken up the job of restoring the cemetery.

SANTA FE—The old practice of printing New Mexico's legislative session laws in Spanish as well as English is being abandoned. The legislature failed to appropriate funds for the project. State laws require the laws be published in both languages, but Attorney General C. C. McCullough declared mimeographing of copies in Spanish would fulfill the intent of the law. Secretary of State Alicia Romero reports she has had only three requests for the laws in Spanish this year.

SAN PATRICIO—Francisco Saiz, Navajo Indian who was said to be 137 years old, died in San Patricio January 21, at the home of Simon Sanchez. He became acquainted with the Sanchez family in the 1860's while he was a government freighter hauling for troops stationed at Fort Stanton. From Sanchez family records, a girl reporter of the *Ruidoso News* recently placed his birthdate in 1811. The ancient Indian had worked as cowboy and sheepherder in his younger days.

HITE—A drawing of the proposed suspension bridge across the Colorado river near Hite has been made by Junius J. Hayes, University of Utah professor and civil engineer. Plans call for a structure 125 feet above water with a total length of 500 feet and an inner span 260 feet long. The bridge would carry traffic up to 13 tons, have a protected pedestrian walk on either side and withstand temperatures of 100

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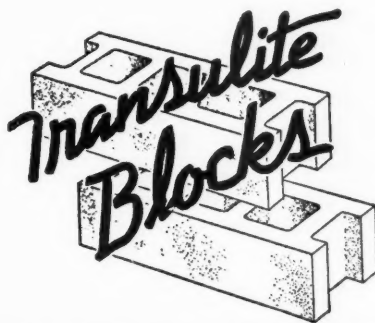
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degrees and winds of 100 miles. Cost of a single car roadway was estimated at \$100,000, two car roadway, \$130,000. Professor Hayes, who designed and built the giant roller-coaster at Saltair, may seek the contract for the Colorado bridge if experiments for which \$4000 have been appropriated prove footings substantial enough for the suspension type.

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Will Study Uintah Geology . . .

SALT LAKE CITY—Students in the geophysics classes at the University of Utah will attempt "exploration geophysics" in the still-wild Uintah basin this summer, according to Edward Jacob, associate professor.

Cattle Rustlers Active . . .

CEDAR CITY—Cattle rustling has reached such a scale on the open ranges of western Beaver and Iron counties that a full-time deputy has been put on the job to stop it. Losses last year in the two counties probably totaled \$10,000, Sheriff Kent



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Smith of Iron county declared. He warned all truckers transporting cattle that every truck will be stopped and checked for brand inspection certificates, bills of sale or other evidence of ownership. Deputy Sheriff E. H. Carroll will patrol all roads throughout the comparatively isolated range area in 1948.

"It is Good with Us" . . .

MONUMENT VALLEY—A thumbprint-signed letter dictated at Goulding's trading post by Navajo who gathered for that purpose declared: "The Navajo want their names on paper to send thanks to our Bilakana (American) friends that heard about our hunger and cold and sent food and clothing from away off. It is very good with us. We will not forget this kindness. May you ride in beauty, may you live in beauty." Harry Goulding, who translated the letter from Navajo dictation into English, said each of the more than 350 Indians who gathered at his remote post wished to sign the letter, but were persuaded to let the blue-ink thumbprints of 17 leaders stand for all.

Feed Deer Herds . . .

SALT LAKE CITY—In an attempt to keep deer out of the nurseries, orchards and backyards of Salt Lake's east bench, the Utah state fish and game commission is feeding an average of 400 animals every day on the slopes of Emigration canyon. The deer automatically migrate to lower levels when snow hits the mountains, and they seem to enjoy their daily meal of alfalfa.

Clothing for students at Whiterocks Indian school whose parents are unable to provide for them, and also for needy Indians on the reservation, has been purchased through a \$350 donation made by the Ute Tribal council. Clothing supply at the school had been depleted by curtailment of Indian bureau funds.

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GEMS AND MINERALS

LARGEST AUDITORIUM FOR CALIFORNIA STATE SHOW

Long Beach municipal auditorium, where the ninth annual convention of the California Federation of Mineralogical societies will be held July 16-18, is the largest building ever used for this convention and there will be room for one and all, Roy Wagoner, convention chairman, reports. Wagoner is the new president of the Long Beach Mineralogical society, host organization for the convention. All dealers, clubs and individuals are cordially invited to participate. The federation has decided not to award ribbons for individual displays this year, it was reported, so that beginners as well as old-timers would feel free to exhibit. Convention headquarters are located at 1850 Pacific Coast highway, Long Beach, and all suggestions, inquiries and requests for space should be mailed there.

The Long Beach society held its regular meeting the second Wednesday in January. Featuring the January birthstone, Charles Knowlton displayed part of his garnet collection and told stories about garnets. The club displayed its own collection of minerals for the first time. January field trip was to Lead Pipe springs. Fifteen members made the long trip and one found a piece of fire opal. February field trip was planned to Opal mountain.

SOUTHWEST MINERALOGISTS GIVE 11th EXHIBIT, MAY 1-2

Southwest Mineralogists, Inc., will hold their 11th annual Gem and Mineral exhibit at the Masonic temple, 471 West 41st place, corner of Figueroa street, Los Angeles, on May 1-2. All persons interested are invited to attend and admission will be free. Walt Shirey is show chairman.

Jack Streeter of the Mineralogical Society of Southern California was to exhibit the Kodachrome slides of the Harvard museum minerals at the February meeting of the Mineralogists. February field trip was to the Ashley Kunzite mine at Pala.

THIRD ANNUAL SAN JOSE GEM EXHIBITION, APRIL 24-25

The San Jose Lapidary Society, Inc., is holding its third annual gem exhibition April 24-25 in the National Guard armory, 240 N. Second street, San Jose, California. Doors will be open on Saturday from 10:00 a. m. to 9:00 p. m. and on Sunday from 9:00 a. m. to 7:00 p. m. Admission will be free. In all, about 55 cases of gems and jewelry will be on display in what the society hopes to make the finest show in California this year. Club members have designed and built 45 uniform show cases, each individually lighted, for the exhibit.

It is expected that there will be more than 9000 pieces of finished work by 45 members in the show. Every phase of lapidary art and its allied crafts will be represented. One of the big attractions will be a large transparency case which will face visitors as they enter the hall. The case will be four feet square and three feet high on eye level. Attendance at last year's show was 4000, and 5000 visitors are expected at the

current one. The society will give each person attending an attractive illustrated brochure.

Competitive classes will be cabochons, flats, jewelry, jewelry working under two years, lapidary work under two years, novelties, facet cut gems and transparencies. First, second and third prizes will be awarded in each class. Cameos and fluorescent material will be on display.

"The Turbulent Colorado" was to be the subject of a talk by Rosalind Johnson and Pauline Saylor at the February meeting of the Mineralogical Society of Southern California, held in the lecture room of Pasadena public library. The story of a summer voyage from Green River down the Colorado to Bright Angel in Grand Canyon national park was to be illustrated with movies and Kodachrome slides. Utah and Arizona minerals were to be displayed.

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AMONG THE ROCK HUNTERS

A lecture on "The Quartz Family" by Ralph Dietz, past-president of Searles Lake Gem and Mineral society was to feature the February meeting of the society at Trona clubhouse. Dietz was said to be one of the outstanding authorities on quartz in the country. Members were urged to bring specimens of the mineral to the meeting. The club made a trip in January to a dyke near Cinco where Carlsbad twin feldspar crystals were collected. February trip was planned to Last Chance canyon, near Red Rock for opals and petrified wood.

A show of Fremont county, Colorado, rocks was to be displayed at the annual Miners' Sowlly Dinner in Denver in February by the Canon City Geology club. Much of the material will represent types of building stone, feldspar, vermiculite, terrazzo marble and rock wool. The major part of the display was to be left in storage in Denver until the national convention in June.

New officers of El Paso Mineral and Gem society were installed January 22. They included: R. H. Miller, president; B. R. Newell, vice-president; Mrs. William Whener, 6304 Weems Way, El Paso, Texas, secretary; Mrs. Roy C. Bible, treasurer; Col. A. S. Imell, retiring president and three-year trustee.

An explanation of how rocks are formed was scheduled for February 5 meeting of the Mineralogical Society of Arizona, with J. R. Wilson of Phoenix union high school as speaker. Louise Lawton was to talk on "The Art of Gem Cutting" at the February 19th meeting. Field trips of the month were to the Desert Botanical garden at Papago park, February 8, and the Montezuma mine near Morristown, February 29. About 30 members participated in the January 11 trip to Canyon lake after geodes, with the "take" reported as satisfactory. Feldspar was discussed at the January 1 meeting, and a question period lasted an hour.

Pacific Mineral Society of Los Angeles, Inc., elected 1948 officers at the January meeting. James Underwood is president; Harold Eales, first vice-president; Leon Heghinian, second vice-president; Virginia Everard, secretary; John Jones, field trip chairman; W. A. Clarke, George Kardell, directors. The club was addressed by Hugh R. Van Wagenen at the February meeting in the Chancellor hotel. Van Wagenen is a consulting mining engineer who served with the strategic minerals division of the foreign economic administration in Australia, New Zealand and Africa, checking mineral deposits. The club planned a February field trip to the city quarry at Riverside.

An audience participation discussion was planned for the February meeting of Marquette Geologists association, to be held in the regular meeting place, the auditorium of the Chicago Academy of Sciences. At the January meeting M. E. Slagel explained the industrial use of the spectrograph in analyzing elements and metals. A general discussion of the treating of various metals in the smelting business followed.

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ROCK COLLECTORS ATTEND PROSPECTORS INSTITUTE

Hundreds of inquiries have been received by the Mining Association of the Southwest concerning the free course of instruction which opened February 17 at the Prospectors Institute, given at Virgil high school, First and Vermont, Los Angeles. Most requests for information came from ex-service men who wanted to learn the fundamentals of prospecting so they can identify mineral specimens found on weekend and vacation trips to mountains and desert. Many were from mineral collectors seeking training to identify specimens collected on field trips.

The Prospectors Institute was scheduled to run seven Tuesday evenings. One evening is devoted to simple assay methods and a fluorescent mineral demonstration, a session which attracted a capacity audience last year. Other lectures tell where to prospect, what to look for, how to identify it and how to file on a claim and hold it.

Newly elected officers of the Sequoia Mineral society, to be installed at the February meeting, are: Forrest Minch, president; Clarence Yoder, vice-president; Leon Dial, secretary; Mabel Andersen, treasurer; Florence Chapin, federation director; Herb Taylor of Dinuba, Pete Eitzen of Reedley, Oscar Venter of Fresno, Wheeler Bryant of Parlier—directors. The meeting was to be held at Belmont Christian church, Fresno. At the January meeting at Parlier, Bill Wedel showed colored travel pictures.

Four Corners Rock club's annual election resulted in selection of Merle Smith for president; Alma Stransky, first vice-president and librarian; H. C. Brockman, second vice-president and parliamentarian; E. W. Neunswander, third vice-president and program; S. N. Green, fourth vice-president and publicity; Harvey Harding, executive secretary; Mrs. Merle Smith, corresponding secretary; Kenneth Owens, treasurer.

Officers of the Cheyenne Geology club for 1948, elected at the January 2 meeting are: Mrs. Frank Clark, 1203 West 32nd, Cheyenne, Wyoming, president; George Westrup, vice-president; Miriam West, secretary-treasurer. Eden Valley wood from the collections of Henry Arp, W. E. Jacobs, Mrs. Frank Clark, Mrs. S. M. Thompson and John Charles Thompson, was exhibited at the meeting. The Cheyenne club will supervise the north-bound field trip of the first national mineral convention to be held in Denver, June 13-16. The field trip, to Wyoming localities, will start June 17.



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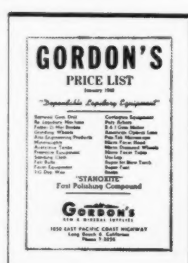
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At the regular meeting of San Fernando Valley Mineral and Gem society, February 12, Chang Wen Ti took 100 members back into ancient Chinese history, 2580 B. C., on the subject of jade. He told how workers, making their stone tools, found one piece of stone they could not cut. They took it to the emperor who looked the stone over and said: "Go find more stones like this and use the system of nature—sand and water—to form them." The speaker then proceeded to trace the history of jade, its use in religion and dress, and its effect on Chinese history to the present date. The club's January field trip was to Horse canyon, with a caravan of 25 cars. February field trip was planned to the Camp Irwin area in search of agate. Meetings are held at Sepulveda Woman's club, 15236 Parthenia, Sepulveda, California, and guests are welcome.

Two sound films, *Story of Nickel* and *Arizona Mineral Resources and Scenic Wonders* were planned for the February meeting of the Los Angeles Mineralogical society. February field trip was to the Darwin mine of the Anaconda Copper company. Mine Superintendent Dudley Davis was to conduct the group through the mine Sunday morning, February 22. On the way to the mine, in Inyo county, a stop was scheduled at the calcite mine, three miles west of Darwin where linerite, scheelite, pyrite crystals, limonite pseudomorphs, galena, anglesite, cerussite, plumbo-jarosite, chalcopryite, calcite, wolastonite, sulphur, dogtooth spar and fluorite occur. Harry Hurlburt was in charge of the three-day field trip.

The Northern California Mineral society of San Francisco has moved to 1001 Oak street, San Francisco 17, from its old quarters, 422 Belvedere street. Minerals used in industry in California were to be discussed by Henry Simons, California state division of mines, at the February meeting. Field trip for January was to the Livermore area where petrified wood was collected. February trip was planned to Pigeon point after fossil bone which has been tentatively identified by Dr. Austin F. Rogers as probably belonging to a whale.

The Utah Mineralogical society presented Professor H. D. W. Donahoo, speaking on geophysical prospecting, at the February meeting held in room 202 of the geology building, University of Utah, Salt Lake City, Utah.

Mr. and Mrs. Lee Reeves showed colored slides of the January rock hunt at the dredger piles just outside Oroville, at the February 13 meeting of the Cherokee Gem and Mineral society of Oroville. The club was organized November 12, 1947, and there are now 30 members. Club officers are: Eleanor Barney, president; Florence DeLong, vice-president; Rose Churchman, secretary; Oliver Truex, treasurer. Club meetings are held the second Friday. Funds are being banked so that the club can purchase its own cutting and polishing equipment and portable mineral light. The society plans its first gem and mineral show this fall, to be held in the old Cherokee school house at a date to be announced later.

First meeting of the Feather River Gem and Mineral society of Oroville, California, was held January 27, when Charles A. Bush, organizing chairman, spoke to 26 members. February 12 the name and constitution of the club were officially adopted. Officers nominated were: Charles Bush, president; F. E. Rankin, vice-president; Adeline B. Rankin, secretary-elect, Route 1, Box 131A, Oroville, California; Ray Palmer, treasurer; W. S. Westwood, Lloyd Niemeyer, Mrs. Alma Hogge, directors. Meetings are held at the Bird street school the second and fourth Thursdays of each month. Visitors are welcome and correspondence is invited.

LOS ANGELES HIGH SCHOOLS OFFER MINERALOGY COURSES

Mineralogy classes of three Los Angeles city evening high schools will offer a study of uses and nature of metallic and nonmetallic minerals during the spring semester. The course will cover origin, occurrence, history, uses and prospecting procedure for locating ores of metals such as tungsten, lead, gold, copper and zinc and nonmetallics such as borax, sulfur, gypsum, asbestos. Special emphasis will be given to the geology of fuels and water resources. Class work will be highlighted by films showing scenic and national park and mineral resource areas of the West. Guest speakers will appear. A large part of the class period will be spent in the laboratory in the study of the identification of minerals.

The groups meet on Monday at North Hollywood high school, 5231 Colfax avenue; on Tuesday and Thursday at Hollywood high school, 1521 N. Highland avenue; on Wednesday and Friday at Belmont high school, 1575 W. Second street. Interested adults are urged to join one of the groups which are offered as part of the adult education program of the Los Angeles city schools.

E. P. Van Leuven was to speak at the February meeting of the Kern County Mineral Society, Inc., held in Bakersfield, California. A motion picture of the mineral resources of Texas was shown at the January meeting, with 38 members and three visitors present. Mr. Blanchard photographed slices of Horse canyon material which members brought. February field trip was planned for the Chuckawalla mountains near Desert Center.

Hollis Page showed colored motion pictures of a recent trip through Oregon, Washington and Montana at the February meeting of Pomona Valley Mineral club, and told of the mines and old mining towns he visited. The club held its annual auction of minerals and cut and polished specimens. Door prizes were won by Mrs. Kroger, Mrs. Kryder and Mr. Smith. February 29, the club planned a field trip to the Metropolitan Water district's softening and filtration plant at La Verne.

Wendell O. Stewart of Monrovia presented "Minerals in Kodachrome" at the February meeting of Santa Monica Gemological society. Stewart commented on each of the 100 minerals and gem stones shown in natural color from the famous Harvard university collection. The speaker also told of the gem stones and minerals of Mexico. February field trip was planned for the Pala area of San Diego county to visit George Ashley and his kunzite mine.

At the February meeting of the Orange Belt Mineralogical society, a talk on the Mother Lode was given by Mr. Gros and slides of Bryce, Zion and Grand canyons were shown. A field trip to the Cargo Muchacho mountains, Imperial county, was held February 21-22, with J. C. Filer, field trip chairman, in charge.

J. A. Wood was elected to lead Mineralogical Society of Southern Nevada, Inc., in 1948. D. McMillan is vice-president; D. G. Malcolm, treasurer; Mrs. F. McMillan, secretary. The society will function as a scientific group, under the recently granted articles of incorporation, with mineral identification and research on related sciences as the object of study. The society sponsored an address by Fred Anderson, U. S. geological survey, "Measuring the Flow of the Colorado River above and below Hoover Dam" at the January meeting. "Weather of the Western United States and its Effects on Topography" was discussed by Marvin Diamond, U. S. bureau of reclamation at the February meeting.

THE DESERT MAGAZINE

NEW MEXICO COLLECTORS ORGANIZE ROCK CLUB

The Dona Ana County Rockhound club of New Mexico was organized January 23, 1948, at the home of S. F. Sanders, Brazito, New Mexico. The club at its second meeting had 15 members from Brazitos and Las Cruces. Officers elected were: Mrs. F. S. Sanders, president; Edwin Archer, vice-president; S. F. Sanders, treasurer; Mrs. Louis Roberts, recording secretary; Don Alfredo, Casa de Las Cruces, Las Cruces, New Mexico, corresponding secretary.

Regular meetings are to be held at the homes and business establishments of members on the second Friday of each month, and a schedule of field trips is to be set up. Membership is open to residents of the Hatch, Las Cruces, Brazito, Mesquite, Berino area. Mrs. S. F. Sanders spoke to the first meeting on crystals. At the second meeting, February 13, Edward Archer spoke on hardness of minerals and Ruth A. Perkins on gems.

Election of officers was held at the January meeting of the Mother Lode Mineral society, at Modesto, California, junior college. Ira Marriott is the new president; Julian Smith, vice-president; Lois Wemyss, secretary, 1310 Tuolumne boulevard; A. J. McMeakin, Felice Stevano, directors; Ed Bowlin, field man. Julian Smith was retiring president. The club held its annual auction with Bill Weston acting as auctioneer. The group voted to collect and send cutting material to the Livermore veteran's hospital.

Sacramento Mineral society officers for 1948 are: George MacClanahan, president; Joseph B. Nichols, vice-president; Mrs. Lillian Coleman, recording secretary and publicity chairman, 2809 T street, Sacramento 16; Mrs. Irma L. Siler, financial secretary; Mrs. Kathryn Holley, treasurer; Mrs. George Hinsey, director; Mrs. Henrietta Thomas, librarian.

Colorado Mineral society planned a mineral display contest at its February meeting. It was being sponsored by the Rocky Mountain Federation of Mineral societies, with awards of 15 ribbons to the winners in five classes: Colorado minerals, Colorado crystals, out-of-state specimens, lapidary, and special, including any unusual mineral material not otherwise classified.

Officers were elected at the December meeting of the Mojave Mineralogical society, held at the home of Mr. and Mrs. Lon Torrey of Mojave. Vince Morgan is president; Lon Torrey, vice-president; Lillian W. Ballinger, secretary-treasurer; Mignonette Morgan, federation director; Howard Pontier, H. J. Hardin, Rena Wilkens and Bill Ballinger, directors. A rock auction was held following adjournment, with specimens donated by members. The month's field trip was to Gem mountain, near Rosamond. Ralph W. Dietz of NOTS Rockhounds was speaker at the February meeting, subject quartz crystals. February field trip was planned to Opal mountain.

Rockhounds as well as miners play an important part in the discovery of useful rocks and minerals. Attorney J. Andrew West told members of the Yavapai Gem and Mineral society of Prescott at the February meeting. His subject was "Rocks of Yavapai County," and he declared that there were more than 1000 varieties of rocks and minerals in the county. The small mines of the county produced \$2,000,000 last year. Homer R. Wood, mining engineer and one of the first white residents of Prescott, gave a short talk on Arizona mineral resources, explaining that 40 per cent of patented mineral acreage in Arizona is in Yavapai county, where there are 800 producers. Wood was unanimously awarded an honorary life membership in the society.

San Diego Mineral and Gem society officially became the new name of the former San Diego Mineralogical society at the February 13 meeting. The new name recognizes the growing interest in lapidary work within the society. It had been approved by the board of directors and was passed by the society without a single dissenting vote. New emblem of the society was drawn by Mrs. R. F. James, member of the Lapidary division. Homer Dana, assistant to Donal Hord, spoke to the February meeting. He outlined the difficulties encountered by Hord, San Diego sculptor, in carving "Thunder," said to be the largest jade sculpture ever made.

Glendale Lapidary and Gem society planned its second anniversary dinner at Schaber's restaurant in Burbank, March 29. Colored slides of vacation trips made by various members of the society were shown at the February meeting. Jack Hadden, 3229 Montrose avenue, La Crescenta, California, is club publicity chairman.

George E. Smith, past president of the Oklahoma Mineral and Gem society of Oklahoma City, spoke to the February club meeting on the subject: "Minerals of the Southeastern United States." The lecture was illustrated with location maps and mineral specimens. Charter President J. B. Lankford reviewed the history of the club, preceding organization and drafting of the charter.

Geoffrey Butcher spoke on staurolite at the February 20 meeting of the Junior Rockhounds of Prescott, Arizona. He told the legend which pictures the fairies weeping when they heard of the crucifixion of Christ, their tears crystallizing as they fell into the form of crosses—the familiar shape of staurolite. Eight members and two visitors were present at the meeting, held at the Rockhounds' headquarters, 331 Park avenue. Interest in rock collecting is being shown in local schools and Chip Murdock, club president, has spoken on fluorescent minerals at the junior high school.

At the regular meeting of the Texas Mineral society in the Baker hotel in Dallas, William Weber of the geological department of Southern Methodist university showed colored slides of the Harvard university mineral collection. Weber also lectured on color photography of rocks.

Ventura Gem and Mineral society selected the following officers at the annual election held in December: James F. Taylor, president; Ruth E. Parker, vice-president; M. B. Rising, secretary-treasurer; E. G. Kempton, field trip chairman. At this meeting a life membership was presented to J. H. Imhoff, veteran collector and lapidary, who has a fine collection of minerals, cabochons and fluorescent wood.

San Geronio Gem and Mineral society embarked on its second year as a rock club January 21, 1948. Meetings are held every third Wednesday, at 8:00 p. m. in the study hall of Banning high school. Short talks on different types of garnets were given by officers of the society. Diamond sawing was discussed by Dick Gilmore and Harold Rouse. Interesting programs and field trips have been planned for each month by Stanton Bretschneider. At the recent club election, M. D. French and Albert F. Showman were selected as directors.

Emil Weyrich was to demonstrate techniques in cutting and polishing and discuss problems in the construction of equipment at the February meeting of Nebraska Mineralogy and Gem club to be held at Joslyn memorial, Omaha. C. H. Hutchens was to show the techniques of silver-smithing. The meeting was designed for members just starting lapidary work, or getting ready to start. Election of officers was planned.

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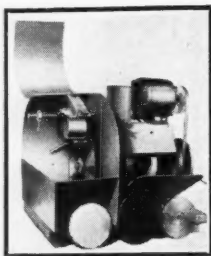
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Minerals have been mined in Park county, Colorado, since 1859, according to *Mineral Minutes* of the Colorado Mineral society. Placer gold was found first in South Park, then lode gold was discovered. Rich silver strikes were made on Mts. Lincoln and Bross in 1871, followed by a rush of prospectors and new discoveries on Buckskin mountain. Lead was mined in 1872 and copper in 1873, but first figures on zinc were listed in 1908. Other important minerals from South Park are galena, pyrite, barite, chalcopryite, sphalerite, quartz, calcite, hematite and limonite. Famous mining camps of the county included Fairplay, Tarryall, Jefferson, Montgomery, Buckskin, Hamilton and Mosquito.

Boiling copper that is not oxidized for a few minutes in a strong solution of soap suds will give it a rich orange color, *The Pick and Dop Stick*, bulletin of the Chicago Rocks and Minerals society, reports. The color will shade to violet if left in a long time. Beeswax and turpentine—melt wax, add turpentine and cool—will act as a lacquer and help the color. Rub it on when the metal is just warm, cool a little and polish with a soft cloth. To make a bright polish, rub on any oil such as raw linseed, heat the article a little, repeating the process until the desired color is obtained. This, it is said, will produce a rich orange or dark brown. A greenish color may be produced by submitting the piece to the fumes of spirits of ammonia after the usual pickling. The information is offered to lapidary workers using copper.

Although iron is the second most abundant metal in the earth's crust, difficulty of reducing it from its ores prevented its use before 4000 B. C., and meteorites, probably, furnished the first iron used.

Officers of the Columbian Geological Society, Inc., of Spokane, Washington, are P. N. Brannan, president; Pat Hubbard, vice-president; J. M. Seubert, W 1820 26th avenue, Spokane 9, secretary; Dale Lambert, treasurer; P. M. Blake, Alma C. Walker, C. E. Kline, directors; C. O. Fernquist, mineralogist; Chas. Magee, federation director. The club meets the first Thursday of every month, 8:00 p. m., at the Eastern Washington State Historical society, W 2316 First avenue, Spokane 9, Washington. The group is dedicated to the study of gem collecting, cutting, minerals and geology.

Black Diamond granite from the Escondido area of San Diego county, California, was used for the monuments at Hoover dam, on which the names of government officials and construction firms were carved. Three large blocks, one weighing 65 tons were shipped at the time the dam was completed.

According to *Rocks and Gems*, bulletin of San Fernando Valley Mineral and Gem society, the true cabochon is a stone cut in the form of an ellipse. Most patterns obtainable from lapidary supply houses are designed as 20, 30 and 40 degree ellipses. Beyond 40 degrees, they approach the round and are called ovals.

The element chromium was first separated from its ore in 1859, W. Scott Lewis declares in a recent issue of his *Mineral Bulletin*. But it was not until 1894 that sufficient uses were discovered to make commercial production profitable. Principal present use is in the making of steel alloys with great strength, toughness and hardness. It also is used in bricks for furnace linings, in paints, dyes and tanning, and in battery manufacturing. Principal ore is chromite, a black mineral with a hardness of 5.5 which frequently occurs in serpentine regions. It is an oxide of chromium and iron.

Chas. S. Knowlton suggests, in the March issue of *Mineral Notes and News* that, if the Beilby layer theory of polishing is correct, the effect of polishing will be lost when the specimen is rotated 180 degrees. The Beilby theory is that the polishing agent heats the surface and causes some of the molecules to flow in the direction of the buff's rotation. If the specimen is rotated and held the same length of time, he says, the molecules would flow back and the result be the same as that of finer sanding. The Beilby theory was tested at California Institute of Technology. Surfaces with tiny pits were stained with contrasting dyes, then polished in one direction. The microscope showed the dyes beneath the surface and they were not removable by solvents. The sections then were reversed and given the same polishing. The pits returned and the dyes were dissolved out.

One of the most popular attractions at the San Diego county fair in June and July was the gem and mineral display. Operating lapidary equipment was set up, and nodules, geodes and petrified wood were sawed and polished while crowds watched. Cases of San Diego county gem stones included rose-pink to lilac kunzite, colorless spodumene, blue to colorless topaz, blue beryl, aquamarine, Morganite, essonite and cinnamon garnets, and all varieties of tourmaline. Roy M. Kepner, Jr., superintendent of the fair's new mineral and mining department, supervised the show.

The state of Minas Geraes, Brazil, has a gold formation called *jacutinga*, according to Arthur J. Bensusan, in *Rocks and Gems*, bulletin of the San Fernando Valley Mineral and Gem society. The gold occurs free in a sandy, micaceous iron ore, with large slabs and chunks of the yellow metal found in crevices of the formation. Gongo Socco was one of the mines producing this type of ore. In 1837 it was owned by an English company which employed 180 Englishmen and 600 African slaves and freedmen. The mine camp became a typical English village, with church and chaplain consecrated by the Bishop of London.

Fossil bones of the glacial era, 20,000 years old, are being recovered systematically as a by-product of Alaskan gold mining. Water under high pressure is used to thaw and tear down the gold-bearing gravel beds. When a fossil bed is reached, the water is cut off and the bones removed carefully. Bones of mastodons and hairy elephants are common, and 40 tons of bone and tusk have been shipped to museums in the United States in the past few years. Bones of small animals are not recovered. The University of Alaska has been helping to save the fossils.

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AZINE



By LELANDE QUICK, Editor of The Lapidary Journal

The weekends in April will see thousands of rock hunters all over the land out in the spring sunshine on field trips. Many will be in large groups but more will be alone or in pairs. I prefer field trips to the desert regions in the society of no more than two or three persons, and that number is for safety rather than society. I see no good reason to flee the hordes of the city to go to the peaceful desert only to meet with other hordes there. I hope no one will resent this attitude, for many others gather great joy from such rock picnics and we want everyone to have fun in their own way.

There are many forms of bad manners displayed on rock trips but no one has catalogued them more aptly than our good friend Ray Mitchell of Franklin Park, Illinois, who is vice-president of the Marquette Geologists association. Mitchell writes: "We are unquestionably the finest, most generous and warm hearted group of hobbyists extant but we do develop field trip traits that can be described as unsocial. Here is a list of objectionable types. If the shoe fits we'll tie it for you."

THE BLASE SOPHISTICATE—He has seen everything. There's no material worth picking. He usually includes a superior criticism of the location, organization of the trip and prospecting technique. He took little or no part in planning the trip but expects to assume a major part in supervising the day's activities.

THE "OVER THE RIDGER"—The specimens underfoot are pretty good but he just knows they will be better over the next ridge (or arroyo, canyon, valley, gully, etc.). This state of affairs can be carried over any number of obstacles, wasting valuable picking time and finding the group far from transportation and with few specimens at sundown.

THE LONE RANGER—Starts developing a shifty eye several miles before arrival at the site. Disembarks and disappears surreptitiously. Returns late in the day, frequently loaded with choice material. "Don't we wish we had gone with him?" he says. He is evasive as to the exact location where the best material was found.

THE "CUT IN FRONTER"—Gives you corns from stepping on his heels. Lets you select a site and very actively helps you look it over. Frequently finds gorgeous specimens right under your nose. This type has been known to disappear without trace, especially on sagenite locations.

THE CROSS COUNTRY PROSPECTOR—Plans a week's coverage for a one day trip. Thinks nothing of hiking 15 miles in one direction. He's usually brought in about midnight by a searching party and he has lost or discarded most of his material. He never finds much anyway because he travels too fast.

THE OVERLOADER—This born optimist wants to take everything along. His motto is, "You can always throw it away." Has leanings toward outside specimens and never has enough specimen bags. His car has broken springs and he complains of poor gas mileage. His clutch slips on the hills so that persons riding with him must crowd into other cars for the return trip. He should have a dump truck. He usually has the largest rock garden in town and is usually well liked in spite of the foregoing.

THE OTHER-TRIPPER—Compares the current location to others he has visited. They were

all better. Fills the day with stories of fine material available elsewhere. Never helps plan a trip and takes home very little material.

THE PESSIMIST—"Looks like rain." "Too much dust to see specimens." "Could have bought a load of stuff for the cost of this trip." "Material here is third rate." "Wouldn't climb that hill for a one-ounce benitoite brilliant." "Sunset is probably beautiful—but we came for rocks." Wonders why he came along in his business clothes—and so do we.

THE FIELD ASSAYER—Has so much equipment he can't carry any specimens. Wastes the day digging and breaking useless material. Ruins his clothing with reagents. Holds up the group while running tests. The gang must gather around as a windbreak while he uses a blow-pipe. Makes world-shaking field discoveries that simmer out under proper tests.

THE LOCATION LOSER—He has a good specimen eye. Out two hours and halloos his way back with several fine pieces of material. Spends the rest of the day trying to relocate the deposit with the help of the entire group. Usually a swell guy but should be assigned a keeper on all trips.

"ALONG FOR THE RIDE"—A friend or relative of one of the rockhounds. Always thought they were peculiar and can now understand why. Not properly clothed for the trip. If a lady she tears nylons and wears high heels. She gets hungry and thirsty once an hour. Spends hours lugging around junk and asking, "Is this anything?" Complains of flies, dust, sun, hills, mud, wind, etc. Is hysterical about snakes. At the end of the day is not speaking to the person who brought her along.

THE LOCATION BROADCASTER—While not a trip spoiler is still a prime pest. Uses no discretion in protecting the location. Tells the world about every good spot with no consideration of property rights or ownership of the land. Soon has the location overrun with collectors and it becomes closed to collecting. Many city collectors do not understand that rural property is just as subject to trespass as city property. Locations should be protected to the extent that permission is granted beforehand where prospecting is to be done on private land.

To Mitchell's fine list we would like to add the plain unadulterated crook. He examines everybody's load, looks it over carefully and says, "This is no good, no use hauling it home, it's dog-rock." Then he tosses it over his shoulder. When the unwary rockhunter gets out of sight he hastily gathers the really fine specimens he has discarded and parks them in his own sack. Months later, when his fine cabochons appear at the society meeting, he says "Yeh, some nut threw that away and I picked it up." Such folks should be made to swallow a geode whole.

By going off in twos and three you eliminate most of the objectionable types. There's the other side too. You'll miss the real fellowship of a big gang. Here and there among the tales of the campfire, one might make you laugh. And although you swear you'll never eat rabbit, someone palms it off as chicken and you find it's really good. And while you are not allowed pastry in your diet you try four different kinds of chocolate cake. You think you'll take off five pounds with all the hiking—and you come home three pounds heavier.

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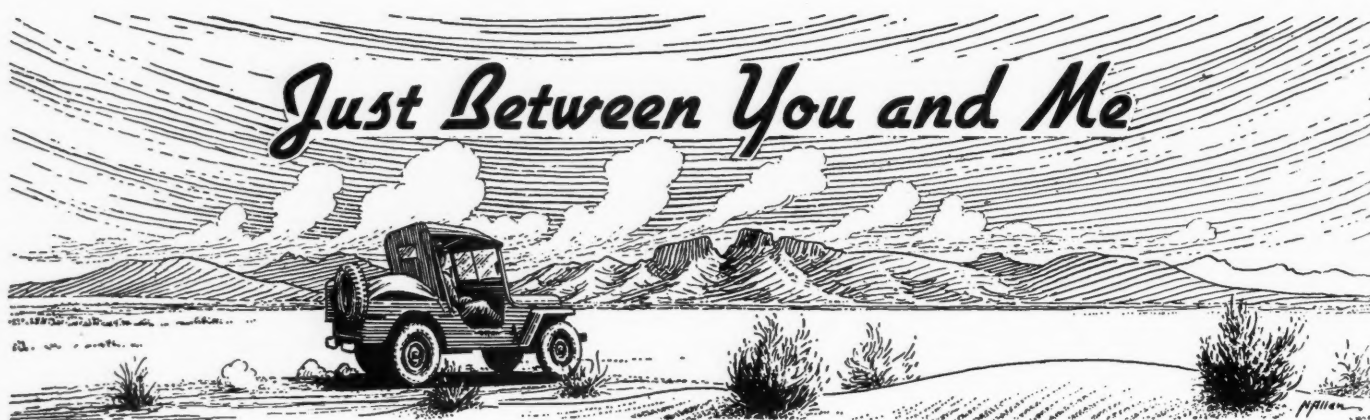
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By RANDALL HENDERSON

THE MINING men are going on the warpath again. They've held a couple of powwows lately to plot a new attack on the Joshua Tree national monument. They want all mining restrictions removed in the park area.

I haven't much sympathy for those fellows. Three years ago they were offered a fair compromise. The U. S. Park service acknowledged there was some mineralization in the eastern area of the park and agreed to restore 310,000 acres to the public domain, leaving 550,000 acres of the scenic western portion for park purposes. Conservation groups generally went along on this proposal, and it was embodied in H.R. 4703 known as the Sheppard bill.

But the mining men opposed the compromise. They wanted all or nothing. And they have gotten what they deserved—nothing.

Prospectors burrowed into that area for a hundred years before it was set aside as a park without finding enough gold to pay for the grubstakes. If it had minerals worth reclaiming the ground would have been patented long ago, as have the iron claims now owned by Henry Kaiser on the east side of the district.

The western two-thirds of the Monument is a natural park—a fantastic wonderland of rocks among which Nature has strewn a gorgeous array of flowers and shrubs and grotesque trees. Within this area are a thousand sheltered little coves that have an almost irresistible appeal to those who love camping in the open. I have spent a night in Joshua when the ground was so carpeted with color it was difficult to find a spot big enough for my sleeping bag without crushing a tiny blossom.

Those of you who have traveled the West know what miners do to the landscape. You've seen the scarred hillsides, the unsightly dumps, the mutilated vegetation, the ugly shacks, the piles of tin cans and broken machinery. Miners build for the day only—and when they have robbed the earth of its riches they leave. But the ugly picture they have created remains.

I really do not believe there is enough mineral wealth in Joshua Tree national monument to bring such a condition to pass in that area. But even if the rocks were studded with gold, I think I would favor leaving it there. I cannot see much sense in digging it out of one hole and then stuffing it away in another at Fort Knox, Kentucky, where we have to hire guards to protect it. Uncle Sam has no crying need for gold—and the hungry folks in Europe cannot eat it.

Let's keep Joshua Tree national monument as Nature created it—where the folks who have to live in crowded cities may come out and share the beauty and peace of a world that has not been disturbed by man's greed for gold.

* * *

Traveling the desert country I always carry my bedroll in my car. And when evening comes, if the "no vacancy" signs are out, or the rentals seem exorbitant, I merely pull off on a side road

until I come to a clean sandy floor, and there I unroll my sleeping bag.

I carry an air mattress which is easily inflated. It may be done with the tire pump—or by mouth. I favor the latter method. It is a good deep-breathing exercise. And I will defy the makers of inner springs and other sleeping luxuries to create a more comfortable bed than my zipper bag on the ground.

The secret of comfort on an air mattress is in the proper inflation. Too much air becomes as uncomfortable before morning as too little. One learns by the trial and error method.

During March and April I sleep out on the desert as much as possible. These are the ideal camping months. Most evenings the air is just cool enough to call for a jacket and a small camp fire. In congenial company, or alone, an evening by a campfire is one of the best tonics I know for the ills of an insecure civilization.

Recently I spent such an evening in Deep canyon on the south side of California's Coachella valley. I followed a winding road which leads through a luxurious growth of ironwood, catsclaw, smoke tree, palo verde and smaller shrubs far back into the Santa Rosa mountains. The trail is sandy in places but with careful driving one can make it even in a heavy low-slung car.

When I came to a catsclaw which had lived its span and died I pulled off the trail and built my campfire. The moon was just coming over a ridge to the east, and I do not know whether the coyote up on the slope above was barking at me or the man in the moon. But it did not matter. I welcomed the companionship of both the moon and the coyote.

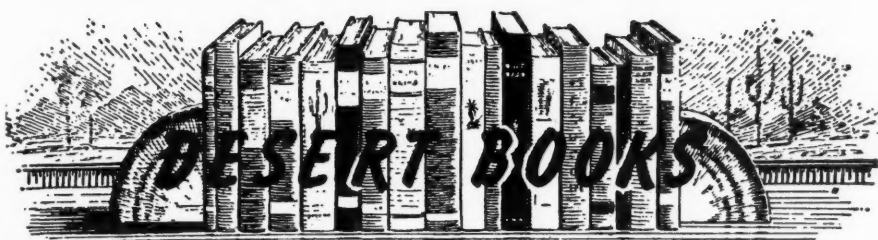
At such a time and place one can see millions of miles through space to the stars in the heavens above. I have a feeling that in such an environment perhaps one also may see a little further into the maze of conflicting interests with which we are surrounded in our daily association with other human beings. It is important that we try to gain such insight.

I pondered the reasons for the insecurity, which seems so much more prevalent today than in the period of my youth. I suspect this feeling of insecurity is in some measure responsible for our economic inflation. Too many of us are managing our affairs on the theory, "get all you can while the getting is good."

To the extent that is true we are defeating our own ends. We make the mistake of assuming money alone will buy security. It isn't true. Most of the things one buys with money may be taken away or lost in a thousand ways—and that is especially true of gold itself.

True security is something we acquire within. It is the reward of sincerity, integrity, tolerance, understanding. We can develop these inner resources ourselves as a matter of habit. And no power on earth can take them away from us.

Anyway, those were my thoughts as I sat beside the catsclaw campfire in Deep canyon. I daresay that in the same environment you would arrive at about the same conclusions. It is good for one's morale to spend such an evening.



HE BLAZED LONELY SOUTHWEST TRAILS

Jacob Hamblin, Mormon trail blazer and missionary, was one of the great figures of the Western frontier. JACOB HAMBLIN, BUCKSKIN APOSTLE, his first full-length biography, written by Paul Bailey, has just been published—more than 60 years after Hamblin's death. Many things have contributed to the tardy realization of Hamblin's towering position among the makers of Southwestern history, among them the facts that he was a Mormon and a polygamist. And Jacob was almost unique among his contemporaries in that he treated the Indians like human beings, kept his word to them and worked always for peace. That attitude has not appealed to the writers of Western thrillers.

Despite—or because of—his refusal to shed Indian blood, Jacob Hamblin's life was one long adventure story. He was the first, after Escalante, to ford the turbulent Colorado at the Crossing of the Fathers. In 1858 he went to the Hopi villages in the heart of savage Navajoland to try to convert a people who had driven out the Spanish padres. He went alone to the hogans of Navajo who believed Mormons had killed their chief's son, and placed his life in immediate danger to halt a new Indian war against Zion. He guided and protected emigrant caravans along the Old Spanish trail. He was J. W. Powell's guide on the second Grand Canyon expedition.

All this Paul Bailey tells—and much more. It is a full-rounded portrait which does not attempt to gloss over Jacob's faults. The matter of polygamy receives full attention, and the story of the Mountain Meadows massacre is told with the apparent attempt to assess fairly the known facts. Bailey is well qualified to write Jacob's biography. He knows the background intimately and has already told the stories of Sam Brannan and of the Mormon Battalion. With Jacob's story he includes much of the history of the Mormon church. In his attempts to present a complete picture he probably will draw fire from both sides in the Mormon controversy—the violently pro-Mormon and the violently anti-Mormon. Such criticism merely would give emphasis to the book's integrity.

Jacob Hamblin was strongly religious throughout his life. While a young man he had a vision or message in which he was told that if he never shed the blood of an Indian, not one of them would have the power to shed his. This he believed implicitly. And once, in Tooele valley, he stood between unarmed Indians and a

Mormon firing squad. "Shoot me first," he said. "I pledged these Indians safety. If they die—I die. I'd rather be murdered than the murderer." It is easy to understand why the Indians came to trust him when they would no one else. "Jacob's heart is good," they said.

And Jacob's story is good. It is regrettable that JACOB HAMBLIN, BUCKSKIN APOSTLE was printed in a limited edition. Jacob's story should be widely distributed. The book is an important Southwest item.

Westernlore Press, Los Angeles, 1948. 400 pps., photographic illustrations, map end-papers, index, notes, bibliography. \$4.50. Edition limited to 1996 copies.

OREN ARNOLD WRITES FOR SOUTHWEST VISITORS

SUN GETS IN YOUR EYES is a sort of Oren Arnold reader containing, for the most part, condensations, reprints and selections from his earlier writings, including material which has appeared in Desert Magazine. He deals with Indian and Spanish history, irrigation, cowboy brands, archeology, plants and flowers, dude ranches, rodeos, square dancing, lost mines, western recipes, building hints and a few typical Southwestern jokes. There is much interesting material and good writ-

ing in the book. The book obviously was designed for the Southwest visitor who knows not too much about the country.

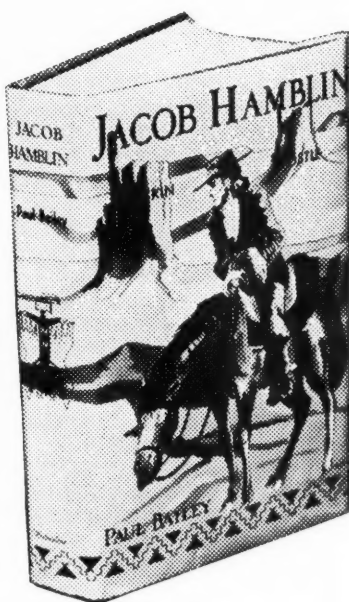
University of New Mexico Press, Albuquerque, 1947. 253 pps., illustrations by Lloyd Lozes Goff, bibliography. \$2.50.

BOOK NOTES . . .

St. Michaels Press of St. Michaels, Arizona, plans publication of *Head and Face Masks in Navaho Ceremonialism*, by Father Berard Haile. The work will cover masks of the Nightway, Mountain-topway, Coyoteway, Big Hashch-eway and other Navajo ceremonials, including plates in color.

Desert rats of Searles Valley long have enjoyed the fantastic tales of Panamint Pete, which accompanied the weekly temperature reports in the *Trona Argonaut*. Now a selection of the stories with Leonard F. Murnane, editor of the Trona paper, admitting authorship, have been published under the title *101 Adventures of Panamint Pete*. In addition to the tall tales, there is an amusing outline of the history of Trona as Murnane sees it. The 102 page booklet was published by the *Randsburg Times*, Randsburg, California.

Echoes of Yesterday, a centennial history of Summit county, Utah, has been published by the Summit county Daughters of Utah Pioneers. The book briefly reviews the story of trappers, the Reed-Donner party, Mormon pioneers, handcart companies, Johnston's army, the stagecoach, pony express, telegraph and railroad. History of 14 towns in the county is retold.



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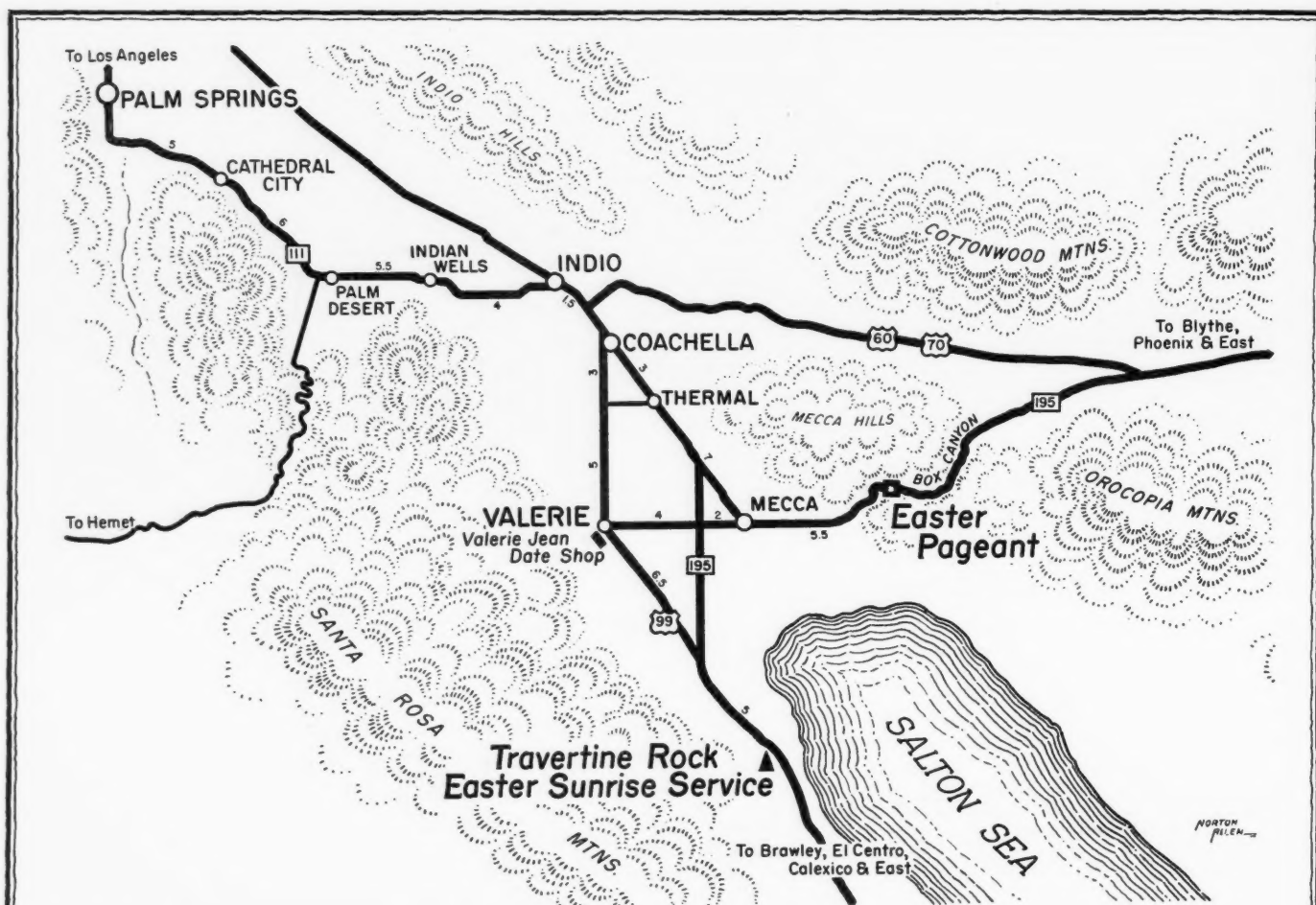
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Coachella Valley Players invite you to witness the third annual presentation of the Easter Pageant

THE MASTER PASSES BY

By HELEN DRUSILLA BELL

to be staged in an outdoor theater in Box Canyon, California, on the evening of Good Friday, March 26.

Presented in a setting which in many respects resembles the far eastern desert in which the Christos lived and was crucified, the Pageant is a vivid non-sectarian portrayal of significant events during the last days of the Man who was the Founder of the Christian religion.

INVITATION TO CAMPERS . . .

Since the Easter Pageant comes at a season when night temperatures are moderate, it is suggested that visitors bring their camping equipment and spread their bedrolls on the clean dry sand of the desert in one of the many sheltered coves of the Box canyon area. Water, and wood for a small campfire should be provided.

You'll be thrilled by this outdoor pageant, and a night under the starlit canopy of the desert sky will make the trip a double pleasure. Increasing numbers of visitors are enjoying this camping experience each year. You are invited to be one of the campers this season.

The stage for this historical drama is a natural platform, and the backdrop and wings are the colorful stratified rock of the canyon walls. Visitors bring their blankets and cushions and sit on the sandy floor of the desert enraptured and inspired by pageantry that depicts some of the most important events in human history.

It is a beautiful spectacle expressing the spirit of the brotherhood of man—a drama that will leave you deeply touched and richly uplifted.

The Coachella Easter Pageant is a non-profit endeavor. There is no admission charge. Costumes and other items of expense are financed by civic groups and individuals in the Coachella Valley. The time is 8:30, and the pageant lasts one hour.

Nearly all the religions of the civilized world came from the desert. It is especially fitting then that the great truths which are common to so many religious creeds should thus be portrayed in pageantry in a desert setting by desert people.

Easter Pageant is more than mere entertainment. It is a spiritual experience that will leave a deep and lasting impression.

Follow the map to Box Canyon Friday evening, March 26.

This invitation sponsored by Russell Nicoll of the VALERIE JEAN DATE SHOP, Thermal, California